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Is now in successful operation in a large number of mills, both large and small, on hard and soft wheat, and is meeting with unparalleled success. All the mills now running on this system are doing very fine and close work, and we are in receipt of the most flattering letters from millers. References and letters of introduction to parties using the Odell Rolls and System, will be furnished on application to all who desire to investigate.

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Invented and Patented by U. H. ODELL, the builder of several of the largest and best Gradual Reduction Flour Mills in the country.

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possessed by the Odell Roller Mill over all competitors, all of which are broadly covered by patents, and cannot be used on any other machine.

1. It is driven entirely with belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving-belt from the power shaft, thus obtaining a positive differential motion which cannot be had with short belts.

2. It is the only Roller Mill in market which can instantly be stopped without throwing off the driving-belt or that has adequate tightener devices for taking up the stretch of the driving-belts.

3. It is the only Roller Mill in which one movement of a hand lever spreads the rolls apart and shuts off the feed at the same time. The reverse movement of this lever brings the rolls back again exactly into working position and at the same time turns on the feed.

4. It is the only Roller Mill in which the movable roll-bearings may be adjusted to and from the stationary roll-bearings without disturbing the tension-spring.

5. Our Corrugation is a decided advance over all others. It produces a more even granulation, more middlings of uniform shape and size, and cleans the bran better.

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Our Corrugation differs from all others, and produces less Break Flour and Middlings of Better Quality.

Mill owners adopting our Roller Mills will have the benefit of Mr. Odell's advice, and long experience in arranging mills. Can furnish machines on short notice. For further information, apply in person or by letter to the sole manufacturers,

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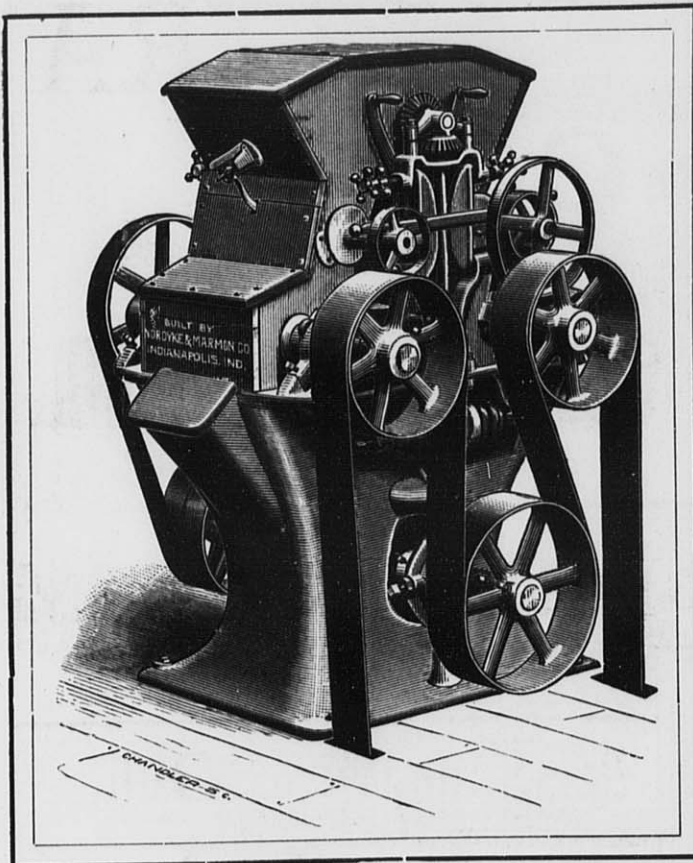
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Furnish d under one Contract.



140 BARREL MILL, MEMPHIS, TENN.

MEMPHIS, TENN., December 16th, 1884.

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Gentlemen:—Our mill, as planned and diagrammed by you, has been in steady operation for nearly one year past, and in proof that you have given us a successful job, we will simply say that in the face of a very dull trade, and while other mills were running on short time, we have been running full handed, in order to supply a genuine demand for our flours. We must also notice, that although you only promised us 100 bbls. capacity, we easily make 140 bbls. per day without deteriorating in grades of flours. We use No. 2 wheat, and consume 4 bushels and 28 pounds in making a barrel of flour. We make about 28 per cent. of very high patent, 68 of bakers, and 6 per cent. of low grade. Yet our mill is so constructed that we may vary the percentages to suit various markets. We have always been victorious in the sharpest competition, and from the first day of starting we have kept the highest position among all roller mills either located or represented in this region.

Yours truly,

G. W. COWEN & CO.

NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Gentlemen:—We have just been awarded all the first premiums on flour offered at the great Fair and Exposition. We made a clean sweep of them all, over all competitors, which includes all the mills in St. Louis, and all over the West, in fact the entries were open to the whole United States. We received 1st premium on Patent Flour, 1st premium on Straight Flour, 1st premium on Clear Flour. This embraces the entire list; the flour was made on your rolls, and you should make the fact widely known. Hurrah! for the N. & M. Co., and Anchor Milling Co.

Yours very truly,

JOHN CRANGLE, V. Prest.

NORDYKE & MARMON CO.

NOTE.—The entire reduction of the wheat and middlings is made upon our rolls in this mill.

500 BARREL MILL IN MISSOURI.

Read what an Old Miller who has thirty-four pairs of these Rolls in constant use says:

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.

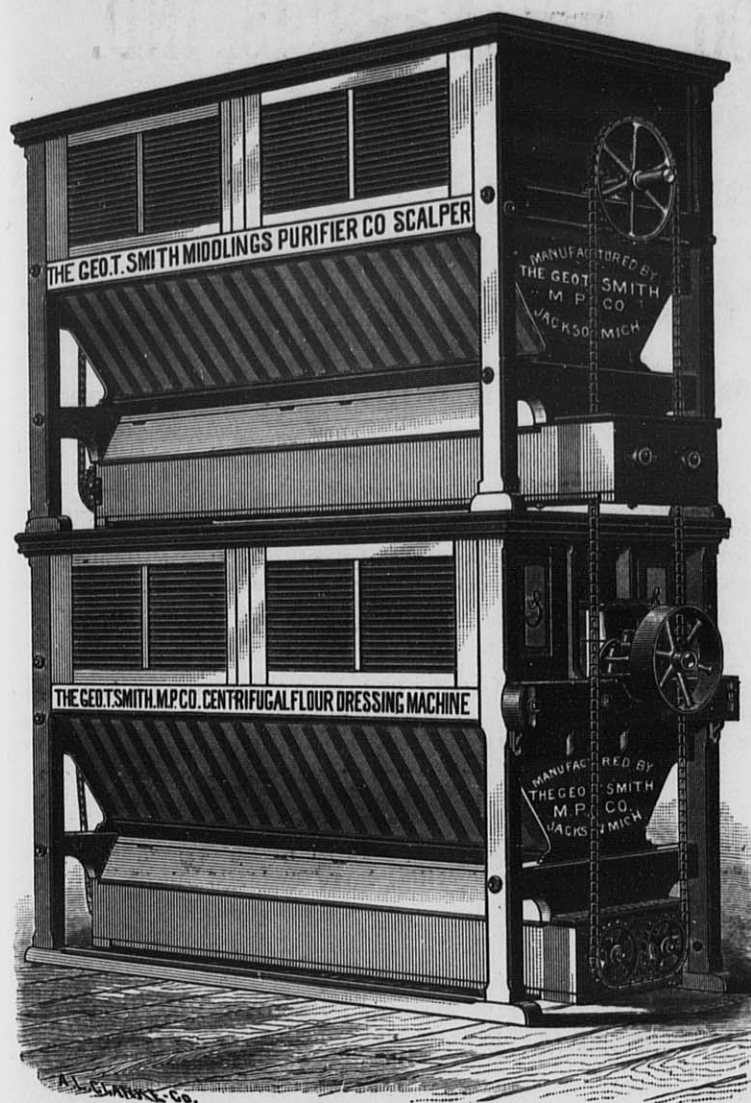
Gentlemen:—In regard to the workings of our new mill erected by you, will say it is working fully up to and beyond our expectations. Our average work is fully 33 per cent. over your guarantee. Since starting our mill last July we have had no complaint of our flour from any market where sold. It gives universal satisfaction, and we have it scattered on the trade from Chicago to Galveston, Texas. Our yields are all that are attainable. We have tested it on both Spring and Winter wheats with satisfactory results on both varieties. Since the mill was turned over to us we have not changed a spout or a foot of cloth, nor have we found it required to make any changes. We have run as long as six days and nights without shutting steam off the engine, not having a "choke" or a belt to come off. The mill is entirely satisfactory to us, and for a fine job of workmanship, milling skill and perfection of system, we doubt if it is surpassed in the United States to-day. It is certainly a grand monument to the ability and skill of Col. C. A. Winn, your Milling Engineer and Designer. You may point to this mill with pride and say to competitors: "You may try to equal, but you will never beat it." Wishing you the success that honorable dealing deserves, I am,

Yours, etc.,

R. H. FAUCETT, Prest.

Letters on file in our office from a large number of small Roller Millers giving as favorable reports as above. A portion will be published as occasion demands.

[Please mention the UNITED STATES MILLER when you write to us.]



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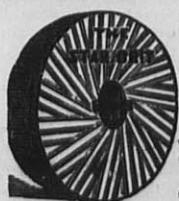
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STRAWS



WHICH SHOW HOW STRONGLY THE BEST MILLERS FAVOR THE

GRAY'S NOISELESS BELT ROLLER MILL

AND THE ALLIS SYSTEM OF ROLLER MILLING.

Messrs. C. A. Pillsbury & Co., the largest milling firm in America, after using the Gray Noiseless Roller Mills for four years, in competition with machines of various other makes, when they decided to rebuild the "Pillsbury B," strictly stipulated that no other Roller Mills but the Gray Patent should be used, and all bidders were required to bid with this understanding.

* * * *

The Washburn Mill Co., of Minneapolis, when they decided to rebuild their "Lincoln Mill" made the same stipulation as above, and the firm building the mill, though manufacturers of a rival machine, are forced to use the Gray Noiseless Roller Mills. The Washburn Mill Co. had used the Gray machines for four years, knew their merits, and were not disposed to try any experiments.

* * * *

Messrs. Kidder & Sons, Terre Haute, Ind., after an experience of over four years in using Gray's Noiseless Roller Mills, will use no others, and for the enlargement of their "Avenue" Mills, have ordered eight more of these famous machines.

* * * *

Messrs. Darrah Bros., Big Rapids, Mich., whose mill, built on the Allis System in 1884, was destroyed by fire a few months since, in rebuilding, would use no other machinery or system, and only required in their contract a guarantee that the mill now building for them should be as good as the mill built in 1884.

* * * *

The Lanier Mill Co., Nashville, Tenn., after three years' experience in running the mill built for them on the Allis system, and using the Gray Noiseless Roller Mills, have placed their order for their new 500-bbl. mill at Memphis, Tenn., with the same builders, none other being asked to figure on the work. The Lanier Mill Co. are also increasing the capacity of their present mill, and refitting it on the Allis system. No stronger proof can be given of the superiority and perfect working qualities of the Allis System and Machinery.

* * * *

The Weston Milling Co., Limited, Scranton, Pa., which operates one of the largest bakeries in the East, recently decided to add an extensive roller mill to their plant, and placed their order for a mill on the Allis system, and using the Gray Noiseless Roller Mills, stating that their long experience in using flour from mills in all sections of the country convinced them that the Allis system of milling was far superior to any other, and that they run no possible risk in adopting it, as they knew beforehand what results it would produce.

* * * *

A whole stack of "Straws" like the above are open to the inspection of millers who are interested. The demand for the celebrated Gray Noiseless Roller Mills, as shown by the order books of the manufacturers, is larger now than ever before, and is steadily increasing. The millers of this country are beginning to see that it takes something more than a fine cut and deceptive advertisements to make a good Roller Mill, and that to insure good results when a mill starts, the practical knowledge drawn from years of experience in designing and building the most successful flour mills in America, is worth vastly more than the strongest guarantees or the most plausible theories.

EDW. P. ALLIS & CO.,

RELiance WORKS,

MILWAUKEE, WIS.



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[Written for the U. S. MILLER.]

THE MILLER AND THE MAID.

Across the heath and down the hill,
A-back of patient Dobbin,
The farmer's daughter rides to mill,
And mocks the thrush and robin.

For saddle she's a sack of grain,
She side-wise sits and chirrups;
A finger in old Dobbin's mane
Is good as forty stirrups.

The miller comes—a merry blade—
And tips his hat to greet her;
"What wish you here, my pretty maid?"
"I've brought a sack of wheat, sir."

"And have you gold to give for grist?"
"Not I, we're poor, a-lack, sir;
But, take your toll—a tenth, I wist—
From what is in my sack, sir."

He lifts her lightly from the seat,
And laughs—a merry miller:—
"I cannot take my toll in wheat,
I must have gold or silver;

But since you've brought no coin nor scrip,"
He smiles and fondly eyes her,—
"I'll ask no toll, but, from your lips
One kiss;—who'll be the wiser?"

The maiden blushed and bowed her head,
And with her apron fingered,
And pouted out her lips of red
Where countless kisses lingered.

"A single kiss!"—(she smiled in glee,
As one would say: "I've caught you;")
"My father said your toll would be
A tenth of what I brought you."

W. J. STEMLER.

THE FIRST LOCOMOTIVE BELL.

"Did you know Captain Ayers?" said a well-known railroad man to a friend yesterday. "Well, he was famous for two things. He was the conductor of the first through train on the Erie from tidewater to the great lakes, and he was the inventor of the bell-rope by which train men signal the engineer. He was familiarly known as Poppy. Trains on the Erie, when Capt. Ayers was first employed, were few and far between. Passengers never thought of buying tickets, but paid fares on the train. In case a passenger was obstreperous and refused to pay up, there was no way of stopping the train to eject him, and so people were frequently carried from one station to another without paying anything for it.

"Poppy Ayers was running a train between Piermont and Turner's, which was the western terminus of the road at that time. The engineer of the train was a big, burly German, who, like all engineers in those days, regarded himself as master of the train, the conductor being simply a machine to take fares. One day Poppy had been bothered more than usual on his train by stubborn

passengers, and he got to thinking how he could establish communication between himself and the engineer while the train was in motion, and an idea struck him. When he got to Turner's he obtained a section of clothes-line long enough to reach from the engine to the rear of the train. He tied a stick of wood to one end of the rope and fixed it in the engineer's cab, so that when he ran the rope back over the train and pulled on it the stick would be agitated. Then he explained to the engineer the idea, and told him whenever he saw the stick move up and down he must stop the train, for there would be some one on the train who ought to be thrown off. This innovation was resisted by the engineer as an infringement on his rights and the dignity of his office. It was virtually placing the train at the order of the conductor—a thing that could not for a moment be tolerated. So when the train started he removed the stick of wood that dangled near his head and tied the rope fast. Poppy Ayers persisted in tying the wood on the rope and the engineer persisted in ignoring his authority, until one day Poppy, after tying the wood to the rope and hanging it in the cab, turned to the engineer, and, taking him by the throat, exclaimed:

"Now, you pig-headed idiot, which will you do, let the stick alone and stop the train when I pull the rope, or will you take the d—dest licking you ever heard tell of?"

"The engineer weakened and said he'd mind the signal, and he did. Shortly after that Poppy fitted a cow-bell in the cab and threw out the stick of wood. Whenever the cow-bell sounded the train was brought to a stand in short order, and some passenger knew that he must either come down with his fare or get hustled out between stations, regardless of circumstances. At one stroke Poppy Ayres subordinated the engineer to the conductor, and increased the revenue of the company."

THE HOUSE OF THE FUTURE.

Are we realizing the great change that is taking place in the domestic architecture of the large cities. The apartment house, sometimes called the Paris Flat, is a thing of yesterday; yet how immense they are, and how numerous they have become. Certain social reform dreamers have been telling us of the possibilities of the associated home, where a hundred families can live under one roof, with a common kitchen, laundry, and dining hall. They have pointed out the economy of washing and cooking by machinery; but all this was to be done by means of associations,

and the organization of phalanxes and communities. But, lo a marvel! We have the associated home where many families live together with comforts and conveniences the isolated house could not afford; but these great buildings are being erected by capitalists, and not by the committees of associations. New York city has the *Florence*, the *Victoria House*, the *Haight House*, and at least a hundred other immense buildings furnishing luxurious suites of apartments. And on Eight avenue, opposite the Central Park, an enormous structure is to be erected covering a whole block. It will have an interior court-yard, a great restaurant, four elevators, and every possible luxury in the way of fine living and beautiful appointments, all furnished at a cost very much below what would be required in a private house. The man of the future is going to be much better housed than were his ancestors. The American citizen can dwell in a palace superior to any occupied by emperor king or queen, and yet not costly. The feature of the architecture of the future will be these great residential palaces which amount to veritable communities, and are the precursors of great social reforms.

A TRADE-TEACHING SCHOOL.—A trade school is in successful operation in New York City. It was founded in 1881 by Col. R. T. Auchmuty, an architect of that city. In this school are now taught plumbing, plastering, brick-laying, stone-cutting, pattern-making, carpentry, wood-carving and fresco-painting. This institution is intended partly to take the place of the apprentice system, affording intelligent instruction and practical experience in the handling of tools, at a nominal cost, to young men. The old apprentice system, through the opposition of trades unions, and from other causes, has to a considerable extent, fallen into disuse in the United States. The thoroughness of the apprentice system in Europe is practically unknown here, and unless something be done, and speedily, to counteract the growing tendency toward laxness, we shall soon be obliged to rely for skilled labor, in the mechanic arts, on importations of foreign workmen. The undertaking of Col. Auchmuty appears to be a step in the right direction. Its success thus far has given good grounds for believing that it will continue to grow in usefulness, and that eventually the system will be extended to other sections. The development of this enterprise will be watched with interest by all persons engaged in industrial pursuits; by the manufacturer no less than by the workman.

DRIVING BELTS.

BY MR. JOHN TULLIS, GLASGOW.

When coming before this convention the first thought that struck me was, "Can a man trained to the tanning, currying, and belt-making business be mechanical enough to make himself understood by practical millers and engineers?" Then, upon second consideration, I came to the conclusion that practical men would understand my shortcomings best and help very much to make my rough places plain. Therefore, I venture to say that a modern flour mill is now one connected machine, so much so that from the time the wheat is subjected to the first operation, it must travel onward from one grade to another until it is ready for the market. A single hitch of half an hour with one machine or one belt will disarrange the entire mill. A flooding will occur here and a scarcity there, upsetting the calculations of those millers whose delight is to see a continuous flow of the whitest and finest of flour, coming in such a steady volume that from week to week they can tell almost to a bag how much they can manufacture. To the miller, therefore, the best of belting is a very important consideration, and little hints regarding the preserving of it may be of some use. All users of motive power are anxious to have the best, the simplest and the least troublesome system of transmitting that power, and at as reasonable an outlay as possible. The question for consideration is, "Whether belts or ropes are the best and cheapest method?" Both of the systems have their admirers and advocates, and both have proved worthy of much patronage. First cost is often quoted when comparing ropes and belts. There is no doubt but that main belts are much more expensive than driving ropes of cotton or hemp. But we must also look at the first cost of rope pulleys, and compare them with the price of belt pulleys. When these values are considered, I believe the belt-driven mill will be started for very little more money than a rope-driven mill. If the speeds, diameters, and widths are properly calculated—giving 1 in. of width of belt, traveling at 500 ft. per minute, 1 horse power to transmit—the result will be eminently satisfactory. Well made, properly stretched leather belts will run as straight as a line, last for thirty years, and be good for cutting up into smaller sizes after that. A mill engineered after this fashion has a long and comfortable life before it.

Main Driving Belt.—The belt is a soft and most elastic transmitter of power. It absorbs less power in itself than ropes. A number of textile ropes on one pair of pulleys never pull all together as one. Each individual rope has a traveling speed of its own; consequently, there must be a loss of power, whereas a belt transmits the power from one pulley to another in one solid grasp. Belts and ropes both drive well when the distances from center to center are great, and the pulleys large in diameter. But a rope has no chance against a belt when the shafts are near each other, or the pulleys less than 4 ft. 6 in. in diameter. Under these circumstances a good belt will give splendid results, while the best of ropes are a constant annoyance. Main-driving leather belts should be manufactured so that when the joint is

made, while the belt is in its place, it ought to present the appearance of an endless belt. After having been taken up once or twice during the first year, good belts, such as these, require very little attention during the subsequent years of their long life. If the belt is driving in a warm engine room, it ought to get a coating of currier's dubbin three times a year. All belts having much work to do ought to present a clammy face to the pulley, and this condition can be best maintained by applying one coating of dubbin and three coatings of boiled linseed oil once a year. This oil oxidizes, and the gummy surface formed gives the belt a smooth, elastic driving face. A belt looked after in this way will always run slack, and the tear and wear will be inconsiderable. On the other hand, dry belts have to be kept tighter, because they slip and refuse to lift the work. The friction of the running pulley "burns the life" out of the belt while this slipping is going on. The driving face is made as hard as millboard, and is well polished. Bushes are ground down, shafting worn, oil consumed, the belt killed and condemned, because the disease has been misunderstood. If a belt is wanted to do more work than was originally intended, by, say, an addition to the machinery of the mill, a very good plan of getting power is to run a second belt upon the top of the one in use. Do not connect them in any way, and the outside belt will work for itself, and do a large proportion of the driving.

By way of experiment, I have made four 6 in. single belts, running independently on the top of one another over 4 ft. driver and driven pulleys, transmit over 80 horse power, the belts traveling at a speed of 1,800 ft. per minute. Each of these belts did its own share of the work, and while running over its own circumference each gained a little over 30 ft. per minute upon the one below; so that the outside belt traveled over 90 ft. per minute more than the inside belt. The best leather for making belting is proved to be that known as "orange tan." This leather is made from the heaviest and best grown Highland ox hides. During the process of tanning, instead of swelling, as is the case with all bark tannages, this leather becomes thinner in substance, and weighs 45 per cent. less than if tanned with oak bark. The breaking strain, according to Lloyd's proving house test, is 45 per cent. greater than oak-bark tanned leather. There are life and spring in it not found in any other leather. For driving machinery this leather stands first. Long belts should never be made heavy, because the weight makes them swing to a certain extent. The heavier the belt, the greater the oscillation. Double orange tan belts will work as steady as ribbons up to 350 ft. long.

The Singer Manufacturing Company, when designing their new Glasgow factory, were nearly deciding in favor of ropes for the long distance driving. However, after testing the orange tan leather as to weight, working, and breaking strain, the decision was, "There's nothing like leather." There can be seen working at this factory every day between thirty and forty main driving belts up to 30 in. wide; nearly a dozen of them are long, being 150 ft. by 19 in., and of double orange tan. They run as straight and as

steady as a line, and have only once been taken up.

Now comes the answer to the question often asked as to which side of a leather belt ought to run next the pulley. It is well known that by running the "grain," or smooth side next the pulley, there is a considerable gain in driving power. However, by using the boiled linseed oil, as before mentioned, the flesh will soon become as smooth as the grain, and the driving power fully as good. A belt working with the grain side next the pulley really has a much shorter life than the belt running on the flesh side. The reason is, the one is working against the natural growth of the hide, while the other is working according to nature. Take a piece of belt leather and bend it with the grain side inward, and then bend it with the flesh side inward; you will see at once that with the flesh side inward, the leather is much more pliable. Another simple example is, if you take a narrow cutting of belt leather, pull it well, and, when you lay it down, you will at once observe that it naturally curves flesh inward. Nature, therefore, comes as a teacher, and tells us to run the flesh side next the pulley, and practice proves this to be correct.

Plain Leather Chain Belting.—Arched to suit the curve of the pulley, patent leather chain belting is proving to be one of the best belts ever invented. According to this manufacture, the entire face of the belt comes in equal contact with the entire face of the pulley. No unequal strain comes upon the rivets, as they have a level bed to lie upon. The belt is made a little thicker at the edges than in the center. It can be made to suit any curve of pulley. All that is wanted is a templet of the pulley on which the belt has to work. This class of belt transmits 25 per cent. more horse power than a flat belt of the same width. Many engineers are in doubt on this point. In practice, however, the truth of this statement has been proved to be quite correct. A flat belt always retains a cushion of air between itself and the pulley, which prevents perfect grip. This air escapes through the spaces in the chain belt, and the edge leather takes full charge of the power which it has to run.

I will only mention one example. Mr. John Smalley, of Mellor, Lancashire, was troubled with a 28 inch flat double belt not being able to transmit the power of his engines, therefore a quantity of the machinery had to stand idle. A belt of this class was made specially to test this question. That belt is now doing over 25 per cent. more work than the flat double belt could do. It works very steadily, driving as easily as possible. It is the most rapidly joined belt of any. The links have only to be interlocked, the rivet connection made, and then you have an endless belt which runs so straight and steady that it looks like what a belt ought to be. Quite a number of these belts are driving three and four roller mills, and are considered by the millers using them to be "perfection."

Half-Twist Belts.—This class of drive is sometimes the cause of much annoyance. A short belt has a poor life, and if the power wanted demands a wide belt, then the strain upon the outside of the twist becomes so great that bevel wheels and upright shafting have to take the place of a belt. In using ordinary flat belts for this class of drive, it will be observed that a large portion of the

belt assumes a slack appearance on the inside of the twist, which leaves the pulley and does not work. Several plans have been tried to overcome this difficulty, such as splitting the belt up into two or three widths and securing them with cross connecting straps. But none has been so successful as the patent thick-sided and tapered chain belt. The links may be 1 inch deep at the one side, tapering to $\frac{1}{2}$ inch deep at the other. By this formation a twist belt can be made to any width. It comes in contact with every inch of the pulley. The strain is taken up by the heavy side, the slackness is taken out, and the belt seems to work as well as if there were no twist to contend with.

Cotton Belts.—These are very good for many sorts of drives, such as those of paper mills, dye works, wet spinning flax mills, and all sorts of works in which steam and water are present in abundance. They also answer well for outside driving. At our own works we have our own make of cotton belts transmitting power across yards from one building to another, in all weathers, with no other covering than a coat of boiled linseed oil, applied every two months. In warm countries these belts do remarkably well. The objectionable fraying of the edges has now been cured by applying our patent projecting leather edge. This edging is very securely riveted on with the copper wire machine, and is so placed that it meets the thrust of the shifting fork, and saves the cloth from being cut.

Jointing Belts.—Whether the belts are new or old, a properly made joint is of the first importance to all users of belting. The number of belt fasteners in the market is legion, some of them worthy of attention, and many of them not. A well-made butt-joint, with the lace holes punched in row of diamond shape, answers the purpose fully as well as any. Care should be taken that the holes do not come in line across the belt. A good lace, properly applied with all the strands of the lace running lengthways of the driving side of the belt, will last a long time and costs little. If a lap-joint is made, time should be taken to thin down the ends of the lap. Joints of this sort should be made to the curve of the smallest pulley over which the belt has to work. This plan removes the strain from the back of the lap; because the outside of the joint will be $\frac{1}{2}$ inch to $\frac{3}{4}$ inch longer than the inside of the joint. Double or single belting, lap-jointed without being curved, makes the joint so very stiff that every time it travels on and off the pulley, a hinged sort of action takes place immediately beside the joint, and in a very short time the belt is torn across, and often condemned for being made of bad leather, and yet the goods may be of the very best quality.

Accumulations or Lumps on Pulleys and Belts.—Dust should never be allowed to gather into a cake either on pulley or belt, for if so, the fiber of the leather gets very much strained. The belt is prevented from doing its work, because this stranger defies the attempts made by the belt to get a proper hold of the pulley. When I see a belt so handicapped, I begin to think of the sufferings of a friend with a vicious corn.

Belts and Ropes Coming off the Pulleys.—When a bearing gets heated, the shaft naturally becomes heavy to turn. The belts or

ropes having already the maximum power in hand they are designed to cope with, they refuse this extra strain, and will leave the pulleys at once or break. This accident directs the attention of those in charge to the belts or ropes, when time is taken up consulting as to what is to be done. Meanwhile the cause of all the trouble gets time to cool, and the source of annoyance is never discovered. Before a new start is made, all bearings are well lubricated. All goes smoothly, yet some one is blamed for the break-down.

Leather Ropes.—Ever since the introduction of grooved pulleys, leather has come up in various forms of driving rope. Up till now none of them have come to anything as against cotton or hemp rope. There is the ordinary cable-laid hide rope, the strands of which soon cut themselves into pieces by pressure and internal friction. There is also the "Combe" rope, which is made of a multitudinous body of long leather strands twisted together; the friction and pressure also soon cut them up. Then there is the V-shaped solid leather rope, which is much too stiff and hard. The bottom plies get all cut and broken by the outside strain. There is the V-shaped rope with two or more plies of solid leather, with friction sections riveted on these plies. The openings left between these sections are meant to make this rope more pliable, and less liable to cut. It has done some work, but is not a success. There is the square solid leather rope that is now being made, the faults of which are the same as those of the solid leather V-rope. However, there is nothing like perseverance. The outcome of this desire to improve is the patent V-shaped chain rope. This rope seems to possess all the qualities required to enable it to become the driving rope of the future.

1. It can be put on in a very short time, and can be shortened in a few minutes.
2. It offers four times the working contact of a round rope.
3. It will work well, whether long or short.
4. It will work well over small and large diameters.
5. This rope can be made to fit any form of groove.
6. Where textile ropes give trouble, we are willing to run a number of these on twelve month's approbation.

My remarks are finished. I hope I have made myself understood. I thank you, Mr. President and gentlemen, for your kind attention.

REDUCTION IN HOURS OF LABOR.

Hand in hand with increasing earnings has gone a corresponding reduction in the hours of labor. It is a positive fact that the working hours are shortest to-day in countries where wages and productiveness are highest. While the working week in England averages fifty-four to fifty-six hours, Germany's and France's week still average seventy-two hours, with many industries at seventy-eight hours. Massachusetts has fixed sixty hours by statute without having experienced any incursion by competing neighboring states, which still adhere to longer hours. It has been the common experience, wherever tried, that the shorter hours enable the workman to put more energy into his work. In the early part of this century, in English cotton factories, the week extended to seventy-four hours; from 1833 it was reduced to sixty-nine

hours. From this it went gradually to sixty, and in 1874 to fifty-six and a half hours, which may be considered the normal working time of the week in Great Britain; altogether there are trades where fifty to fifty-two hours is the rule. In the United States, the extent of the working day in cotton mills is quoted by Mr. Atkinson as having been thirteen hours in 1840. This was gradually reduced to eleven hours, and since 1883 to ten hours in Massachusetts, with other states beginning to move in the same direction, the state of Rhode Island having adopted a ten-hour day within a month of this writing. In speaking of the building trade and of the normal working day of eight hours in the latter part of the middle ages, Thorold Rogers says: "Employers were very likely to discover that the laborer's resistance to an excessively long day was not entirely personal, and that the work might suffer from the workman's weariness and exhaustion." The excellence of the work, lasting through ages, when more recent constructions have disappeared entirely, is even a more eloquent proof of the soundness of the economic views of our forefathers than the voices which are raised from the grave of yellow parchment. Germany, then at the head of Europe in commerce and manufacture, the economic ruler of the world, the banker and trader of Europe, held to the same rules during its high tide of prosperity. All of which shows that reasonable hours are not at all incompatible with great activity and productiveness; nay, that they are a necessary condition to their achievement.—*Boston Herald*.

GRAIN ELEVATORS ON THE BLACK SEA.—The Russian Minister of Finance, Professor Bunge is at the present moment making a tour along the northern coast of the Black Sea, with a view to selecting sites for the erection of grain elevators. As is well known, Russia has suffered severely in the corn trade during the last few years, owing to the competition of the United States and India. On the spot the grain can be produced cheap enough, but for want of roads the peasants incur a heavy cost in getting it to the railway, and when the expensive railway rates are paid in despatching it to the nearest port, nothing of a mechanical nature exists there to place the corn on board the foreign vessel. The result is, that the cost of transport eats up all the profit, and the amount reaching the peasant is so small that he is becoming more and more impoverished every year. To improve matters, a commission has been appointed to bring about increased facilities of railway transport, and the Minister of Finance is endeavoring this autumn to realize an elaborate scheme of elevator construction which has occupied his attention since 1882. In that year proposals for a monopoly were presented by a Paris syndicate, headed by Count de Morny, and representing a capital of a million sterling. The following year some Americans joined the syndicate, and the capital was doubled, but the Pan Slavist press denounced so vigorously the proposed monopoly that the Minister of Finance felt it unwise to oppose the all-powerful M. Katkoff. He now proposes to erect the elevators under government auspices, raising a special loan for that purpose, and the matter will no doubt be settled without delay.—*Engineering* (London).

"PERFECTION."

One of the most important things about a mill is a good and reliable power, and it is in the selection of a motor that mill-owners find hard work to decide which one of the hundreds that are offered, to select. Most especially is this true if the desired motor be a water-wheel. Every water-wheel builder has the best, of course, and conclusively proves it, either by the length of time the particular water-wheel has held its own in the market, or by some other equally convincing fact.

There are new water-wheels coming to the front every day, and among those is one which has shot into the water-wheel world like a new planet, and in a few short years has taken there a most prominent position. This water-wheel is the "Perfection," made by C. Ridgway & Son, Coatesville, Pa., a wheel now well known to most of the mill-

"Perfection" furnished with a short draft tube. The wheel is simply bolted to the side of the penstock, and carried upon two pieces of timber, which latter are secured by the iron tie-rods. The wheel to the right shows a "Perfection" of a type known as the "Turret" wheel. In this wheel the power is taken off by bevel gears carried in a casting upon the case of wheel. This style of wheel, being moderate in cost, is found very handy and desirable, especially in places where millwrights are scarce, as no particular skilled labor is required to set it up, head-blocks, upright shafting, &c., being done away with.

The "Perfection" wheel admits of almost any kind of setting. In ordinary cases water is brought to them in square trunks that any carpenter can construct, and in the South, where the wheel has a great and growing popularity, the mill owners themselves and farmers' boys set them up and put them to work. The Messrs. Ridgway publish and send free

foreign accent—but it is a fact. Oh, there is nothing like truth. The old Romans were so fond of truth that many of them kept out of politics; and a noble Spartan once said that he would rather steal than to tell a lie. Come to think of it, he was right. Stealing is more profitable.

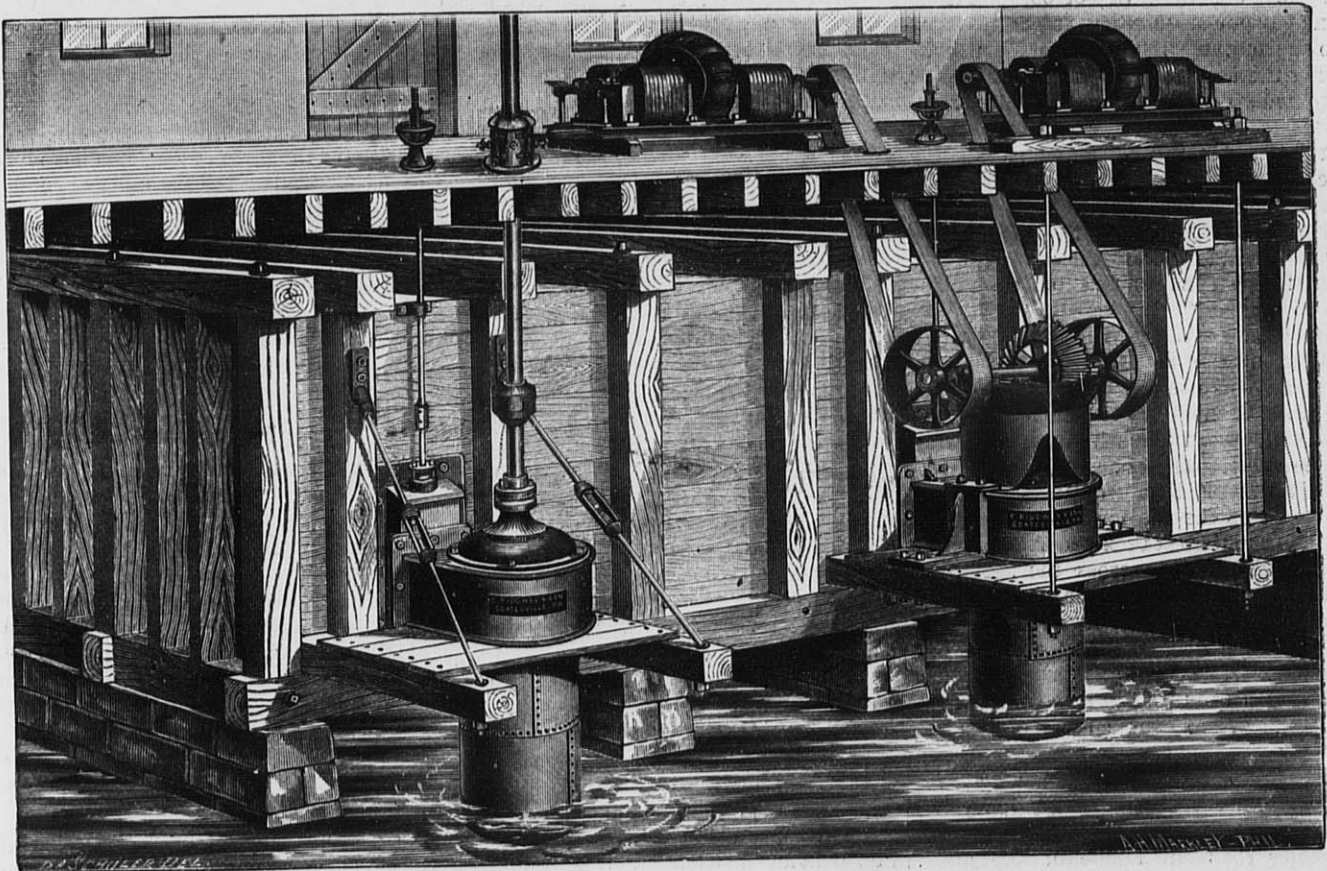
The other day I met my friend Dave Granger. Dave's great merit is his love of truth, but somehow, I have begun to doubt him. He has not said anything to cause this loss of confidence, but the great faith I once had in him shakes a little sometimes. After Dave and I had sat down to a table and had begun to talk, the conversation took a serious turn.

"Dave," said I, "you never saw any speckled trout in Arkansaw, did you?"

"Well, yes."

"I have always understood that the water in this State is too warm for them."

"It is as a rule, but a man named Hicks,



MANNER OF SETTING TWO "PERFECTION" WATER WHEELS.

owners of the country, and a great favorite—hundreds of them having been sent to all parts of the country. The "Perfection" wheel is now so familiar to every user of water power as to need no description. In the accompanying cut we show, however, a new and very neat manner of setting two of them. The great feature of this wheel, of setting outside the water, renders it very well adapted to such a manner of setting. The cut is taken from a large paper mill in Pennsylvania. The penstock shown contains large flume wheels for driving the mill. It was desired to increase the power, and to do so necessitated either enlarging the penstock, which was a very costly job to undertake, or to replace the wheels with larger ones. The owners of the mill met Mr. Ridgway, the builder of the "Perfection" wheel, who increased the power in the manner shown at a very trifling cost. The wheel shown on the left is an ordinary

to every user of water power, one of the handsomest water-wheel books we have ever seen, it being filled from cover to cover with fine illustrations showing almost every conceivable manner of setting water-wheels, together with hundreds of letters from parties using their wheels, and lots of other matter that every water-wheel user should be conversant with. This cut is one of those selected from this water-wheel book, and is a fair sample of the others to be found there.

The Messrs. Ridgway state they have put in the latest and best machinery for cheaply manufacturing this water-wheel, and are now naming extraordinary low prices, to suit the economical spirit of the times.

JUST A FISH STORY.

I must confess that I do not like a liar. This assertion, coming from me, may have a strange sound—may smack somewhat of

who lives out here in the hills, raises bushels of them, but it involves great expense. I'll tell you how he worked it: On his farm there is a beautiful little stream. He attempted to stock it with trout, but soon discovered that the water was too warm. Not discouraged, he proceeded to cool the water. He started an ice factory, and every morning now, during the summer, he deposits ice in the different pools. Well, sir, it would tickle you to see the fish. When the wagon draws up to a pool the driver yells 'Ice' and the fish come flying out from under the rocks. They get up on the ice and carry on in a perfect flutter of glee. Beats anything I ever saw."

"You know Hicks, do you, Dave?"

"Know him? Why, he doesn't live more than two miles from my house."

"Does he allow anybody to catch the trout?"

"He will give you all you can catch with a hook."

"Believe I'll go out some time."

"Won't do you any good."

"Why?"

"The fish won't bite for anybody but Hicks."

"They won't?"

"No, sir; you couldn't get a nibble."

"How do you account for it?"

"Gratitude."

"What?"

"Gratitude, I tell you. They know Hicks. They know how much he has done for them. Why, sir, he can pull them out as fast as he can throw in. You ought to see them look up in his face and smile. One day I was with him. Two of the biggest trout I ever saw began to fight for the hook. One of them got it and the other one, determined not to be outdone, came out on the bank and laid down. I never saw such gratitude."

It is not Dave's eccentric declarations that shakes my faith in him. It must be his careless manner of relating a story.—*N. Y. Mercury.*

NONSENSE.

Brown—"What a sad looking fellow Smith is! What is the matter with him, I wonder?"

Fogg—"Why, didn't you ever hear? He was disappointed in love."

Brown—"Got the mitten, eh?"

Fogg—"O dear, no; he married her."

"Does the smoke displease you madam?" said a smoker to a lady in an Austin street car.

"Very much, sir," answer the lady, tartly.

"Well," returned the gentleman, "that only proves what I have always said—that smoking was a mere matter of taste with different persons. It pleases me very much." He kept on smoking until he left the car.

The driver said that, if the man hadn't been an alderman, he would have put him off.

THE rivalry between Houston and Galveston continues unabated. No matter what the residents of one city claim, the residents of the rival commercial center dispute the claim. A Houston man was in Galveston not long since, the guest of a resident of the latter city. The Galveston man frequently gave his Houston friend a cigar to smoke, at the same time deprecating the inferiority of the weed.

"Now," replied the Houston man, "you've been telling me all along how bad your cigars are. I want you to stop with me a day or so, when you come to Houston, and I will convince you that I can treat my guests to worse cigars than you ever smoked in your life. I'll give you cigars that will break you of the habit of smoking altogether."—*Texas Siftings.*

IN early days, in Scotland, people that felt sleepy during the sermon used to shake off drowsiness by standing up; but poor human nature made this, at times, an occasion of display. At Old Monkland, a man who had on a rather gaudy vest stood up more than once, and threw back his coat, apparently to let his vest be seen. Mr. Bower, the minister, said at length: "Noo, John, ye had better sit doon. We have a seen your braw waistcoat."

A PIOUS lady met Homer Martin one Sunday morning on the way to take an excursion steamer.

"Are you not going to church?" she asked.

"No ma'am," said he.

"But, of course you like to go to church," said she.

"I like it immensely," said the wag, "but I can restrain myself."

CUCUMBERS FOR INDIANS.—"The Indians are making considerable trouble out West," remarked a passenger on a bridge car to his neighbor.

"So I see," was the brief reply.

"Well, sir, I have a first-class scheme for wiping out the rascals."

"With a sponge?" said the other with a sneer.

"No, sir; I would convert —"

"Pooh! that's no good. It won't work."

"Hold on a minute! I would convert the entire reservation into a cucumber patch and turn the red men loose."

"I should think that would increase the number of Indians," piped out a little man with weak eyes who sat opposite.

"How so?" asked the astonished schemer.

"It would double 'em up," said the small man with a smile.

"All out here!" yelled the brakeman, and the council of war broke up *sine die*.

"IT IS A POOR RULE," ETC.—"How is it, Mr. Brown," said the mill owner to the farmer, "that when I came to measure those five barrels of apples I bought of you, I found them nearly a bushel short?"

"Singular, very singular, for I put them up in some of your own flour barrels."

"Ahem! Did, eh? Well, perhaps I made a mistake. Fine weather, isn't it. Let's imbibe."

A TENDER-HEARTED HUSBAND.—"Yes, I've a mighty good man, Mrs. Callaper, but he's an awful tender-hearted body."

"Is he? Well, I wouldn't have thought it."

"La me! you don't say?"

"He never could stand up under trouble of no kind, like me."

"That's very strange."

"Why, bless you ma'am, it just about breaks his heart to tell him the sugar box is empty, and it fairly gives him a spasm whenever the flour gives out."

DIDN'T LEAVE HIS ADDRESS.—"I understand that Mr. Wilson has retired from business," remarked the bill collector to the clerk.

"Yes, sir," replied the clerk.

"I wonder what is to be done with this little bill of mine?"

"I don't know, sir," answered the clerk.

"I think—"

"Where can I address Mr. Wilson? If he doesn't pay, I will sue him. Where is he to be found?"

"I can't say, sir. He —"

"So he has gone away, has he, without leaving his address? The old schemer."

"Yes, sir. He is dead."

"NELLIE, let's you and I play inventor."

"How shall we do it, Tommy?"

"Why, you be the inventor and go in and get some cookies out of the box, and I'll be capitalist and eat them all."

"But, what will I get out of it?"

"Why, you'll get all the fame; I'll tell mamma it was you who took the cookies."

AN UPRIGHT JUDGE.—"I'll allow no man to call me a liar and go unpunished," said a Texas judge to a lawyer who had just committed that offense. "You are fined \$10, sir."

"It's the truth, though," replied the lawyer, as he paid the money.

"I don't care if it is the truth," retorted the judge. "A court of law is no place to tell the truth."—*Drake's Magazine.*

SHARE AND SHARE ALIKE.—Gentleman—What are you doing nowadays, Uncle Rastus? Uncle Rastus—Ise workin' fo' Sam. Jones, sah.

Gentleman—What at?

Uncle Rastus—Pickin' blackberries up on old Mrs. Brown's pasture lot.

Gentleman—Don't Mrs. Brown object to it?

Uncle Rastus—She don't know it, sah.

Gentleman—What does Sam. pay you for picking Mrs. Brown's berries?

Uncle Rastus—He 'low me half what I pick.

"FUTURE" TRADING IN FLOUR IN SCOTLAND.

Messrs. Alex. and Robt. Tod, great millers of Leith and Glasgow, Scotland, have adopted the plan of selling flour for future delivery, which will no doubt compel all the large Scotch and English millers to follow their example while the smaller millers will have to do the best they can to hold their own against this new departure. Messrs. Tod say in their circular:

"Very great changes have taken place in the wheat and flour trades during the last few years. Amongst others is the option of buying wheat for delivery in different months at different prices; and were this method adopted with flour it would enable us to cut the price more closely for each month than is possible under the present system. Also, were a plain sack used and the flour weighed gross, as is done with all foreign flour, this change would, we feel convinced, tend very much to simplify and facilitate business and prove to the advantage of the buyer as well as the seller. We propose in future to offer our flour as above indicated; but if instead of a plain bag and gross weight (as we suggest, and which we think will prove more advantageous to the buyer), the present plan of a branded sack and net weight is preferred, we shall be quite agreeable. In that case the price will be 1s. more. These branded mill bags we shall buy back at 1s. each as heretofore, and the plain bags at 4d. each, when returned to us in good order. We do not propose any change in the existing rates of discount for cash, which at present low price of flour are extremely favorable for the buyer. While we venture respectfully to suggest this change, we do hope it will commend itself to your judgment."

The delivery prices of flour for July, August and September are the same, after that they advance three pence a month, making a total increase of a shilling for the January over the July, August or September figure.

BAD WORKMANSHIP in setting up is found in want of alignment and valve-setting, and these errors easily corrected by intelligent engineers. All the skill of the latter, however, is neutralized if the fault is in the design of the engine. Frames often appear to be solid, yet buckle and spring badly, and, what is of common occurrence, the parts are out of balance. Of all defects most likely to be met with, this is the commonest. Centrifugal force and its action at various speeds is a subtle thing, by no means easily controlled or provided for. At one velocity an engine is noiseless, and at ten revolutions higher or lower, it jars the neighborhood. The weight of parts, and the velocity at which they move, affect the question, and the most perfect fitting and alignment can be neutralized by unbalanced details.

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E. HARRISON CAWKER, EDITOR.

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[Entered at the Post Office at Milwaukee, Wis., as second-class matter.]

MILWAUKEE, SEPTEMBER, 1885.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER. You will thereby oblige not only this paper, but the advertisers.

MILWAUKEE AMUSEMENTS.

ACADEMY OF MUSIC—Performances every evening, Wednesday, Saturday and Sunday matinees.

GRAND OPERA HOUSE.—Performances every evening, and Wednesday, Saturday and Sunday matinees.

DIME MUSEUM—Performances every hour from 1 P. M. to 10 P. M. every day.

SLANSBY'S VARIETY THEATER—Performances every evening, and Thursday and Sunday matinees.

MILWAUKEE EXPOSITION opens Sept. 2.

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It is claimed by good authority that the losses by fire in the United States and Canada for the ten years, ending with 1884, amount to the enormous sum of \$900,000,000.

PROPERLY qualified millers, desiring to secure good situations in South America, should read Edw. P. Allis & Co's advertisement, under the head of Special Notices.

THE permanent exhibition of the manufactures and products of the soil and mines of the United States at Rome, Italy, will open Nov. 1, 1885, under the auspices of the Ministry of Agriculture, Industry and Commerce.

A track will be laid down past the mills on the canal connecting with the Milwaukee & St. Paul Railway system at an early date. The shipping and receiving facilities will then be as good as could be desired.

MILLERS about to add improvements, will do well to read the advertisement of the Valley Iron Works, Appleton, Wis., on another page. The Byrns Three and Five Break roller mills are giving great satisfaction in the mills where they have been introduced.

THE total value of exports of breadstuffs for the month of July was \$8,714,305, of which \$3,378,234 was wheat, and \$2,855,652 in wheat flour, and the remainder consisted of barley, Indian corn and corn-meal, oats and oat-meal and rye. The total value of exports of breadstuffs for the seven months ending July 31, 1885, was \$85,558,982, against \$80,546,131 during corresponding months of 1884.

PERSONAL.

We have been favored with calls from the following gentlemen connected with the trade during the month of August: Col. W. W. Huntley, of Huntley & Hammond, Silver Creek, N. Y.; Mr. R. J. Quale, representing Howes & Ewell, of Silver Creek, N. Y.; L. V. Rathbun, Esq., of Rathbun Bros., Rochester, N. Y.; W. J. Stemler, of this city, John E. Poor, of The Miller and Manufacturer, of Cincinnati, O.

FOREIGN NOTES.

A new dust collector has been placed on the market by Messrs. Lampitt & Co., of Warwick, England.

The Milwaukee Dust Collector Co. has opened an office in London at No. 59 Mark Lane, Rooms 1 and 2.

Thomas Perry & Sons, of Bilston, England, recently cast a roll for imparting a surface to linoleum floor cloth 29 inches in diameter, 13 feet 1 inch in length, and weighing over 15 tons.

John Fiechter & Sons, a well-known mill-furnishing house in Liverpool, England, have failed. They formerly had a branch house in Minneapolis, we believe.

The National Association of British and Irish Millers are still tinkering with the mutual insurance question, and the stiff rates charged by the regular companies seems to be highly encouraging to their enterprise.

The awards of the *Milling Exhibition* in Paris, do not seem to give the majority of exhibitors any better satisfaction than those of our Cincinnati Millers' Exhibition in 1880, and the "kickers" are numerous and active.

The Miller, of Chicago, recently made the statement that "after a thorough and prolonged test the porcelain and smooth rolls are being discarded in the leading mills in Pesth (Austria-Hungary) and buhrs put in their place." English and Continental papers positively deny the truth of the assertion.

Several contracts have recently been made by Australian millers for the erection of all roller millers. It has been learned by long experience that stone-made flour will not stand a long sea journey nearly as well as roller-made flour, and the last year's Australian flour exports have fallen off considerably.

The efforts in England made to give young men a technical education in milling and brewing are meeting with marked success, as shown by the superior examinations held recently. Out of 21 candidates presenting themselves for examination, only two failed to pass.

A considerable number of millers in England are adding extensive bakeries to their mills. We think it is only a question of time when many mills in this country will do likewise. The custom has been in vogue for a great length of time on the Continent. The two trades seem to work well together.

Foreign trade papers show that there is great activity among engineers and mill furnishers, especially in Great Britain and France. A number of new mills are being built and a great many old ones are being remodeled and fitted up with the latest improved machinery. There are, no doubt, a number of mills in Great Britain to-day that are fully as well equipped for business as the best in this country. The greatest drawbacks are, first, their inability to secure a sufficient quantity of good wheat, even in quality, second, the heavy imports of American flour, which stands in high favor with British bakers.

The Mannheim Elevator Co. has recently completed an elevator at Mannheim, Germany, capable of storing about 800,000 bushels of wheat. It cost about \$500,000. The Miller (London) in commenting on this substantial structure and the elevator system of the United States, strongly urges the extensive introduction of the grain elevator system extensively into Great Britain. In concluding its argument, it says:

"The provision of extensive grain storage is bound up with political and social questions of the greatest moment. Is it certain that this country will always be mistress of the seas? And what if she ever found herself face to face with a blockade of wheat, just as China had a recent experience of a blockade of rice? The answer is that her population would be exposed to one of the most appalling famines known to history. Yet, by the help of well-stored elevators, such a contingency might be robbed of much of its terror, and the country be helped to tide over a fearful crisis."

SPECIAL BUSINESS NOTICES

BOLTING CLOTH !

Don't order your Cloth until you have conferred with us; it will pay you both in point of quality and price. We are prepared with special facilities for this work. Write us before you order. Address, CASE MANUFACTURING CO. Office and Factory: Fifth St., North of Waughten, Columbus, Ohio.

A Splendid Opportunity

To buy a first-class 150-barrel Roller Mill, with all appurtenances at less than half cost. The mill in question will be sold at Sheriff's sale, September 12, 1885, between the hours of 10 A. M. and 4 P. M. The Property consists of 13½ acres of land on the Evansville and Terre-Haute R. R., with two dwelling Houses, Cooper Shop, Steam Flouring Mill, and a 35,000 bushels Elevator. The mill contains eight double sets of Allis Rolls, two Flouring Reels, eight Scalping Reels, five Purifiers, two Centrifugal Reels and all other necessary machinery for a first-class mill. Address for further particulars,

HUGH D. McGARY, Sheriff, or,
LAND & GAMBLE, Attorneys,
Princeton, Ind.

GRANT PICTURES

BUFFORD'S INDIA TINT ART PROOFS.—This is the only picture of the renowned general and statesman which has received the indorsement of the Grant family; and nearly every citizen of the United States wants the largest and best likeness yet produced of his country's most illustrious defender, on the best plate paper—21x28 inches. Price only \$1, postpaid, with a copy of the United States Miller for one year, providing your order is received with special request for the picture, on or before Oct. 10, 1885. The regular retail price of this picture ALONE is \$1, post-paid to any address.

WANTED immediately Two good millers who understand our machinery and System of Roller Milling to go to South America to take charge of mills we are now building there. Young Unmarried Men capable of seeing that the Machinery is well put up and in operation are wanted. Must be able to speak German. For further particulars address,
EDW. P. ALLIS & CO.
Milwaukee, Wis.

NEWS.

Taggie & Shupbach are building an 80 bbl. mill at Columbus, Neb.

A stock company will build a \$15,000 mill in Grass Valley, Missoula Co., Mont.

D. S. Bowman's mill at North Georgetown, O., was recently struck by lightning and destroyed.

100 bbl. mills are being erected at Crandon, Minn., for the Crandon Milling Association, and at Fisher's Landing, Minn., for Thompson and Johnson.

Charles A. Gambiell, of Baltimore, died at the Continental Hotel, Aug. 23, under peculiar circumstances. It is believed that he accidentally poisoned himself.

Messrs. Widmeir & Weir, of Lansing, Ia., have begun the erection at Devil's Lake, Dak., of a flour mill 38x50 feet, three stories high, having a daily capacity of 100 bbls.

Wm. Johnson & Co., of New Richmond, Wis., have a canal below their mill nearly completed, whereby they will secure an 18 foot head of water. It is the intention of the firm to raise it to 20 feet next season.

G. W. Batch, a grain dealer and capitalist of New York, has perfected arrangements for opening a bank at Duluth. It will be organized under the laws of the state and will have a capital of at least \$200,000.

Berry & Gale Bros., 40 barrel water-power mill, at Laval, Wis., was destroyed by fire Aug. 21. Insurance on building and stock \$6,000, which it is said will not nearly cover the loss. The fire was started by incendiaries.

M. E. Moore, Waterville, Kas., is rebuilding on the site of the old mill that was destroyed by fire at that place last fall. The Great Western Mfg. Co., Leavenworth, Kas., has the order for the principal part of the machinery.

One of the leading concerns of Brownington, Mo., is the Brownington Milling Co., which has recently erected an improved roller mill, containing five double sets of rolls and two runs of stone for corn, with a capacity of fifty barrels per day.

The machinery for the Cheney, Oreg., elevator, now on the ground, consists of a new 30-horse power engine and boiler, smutters, fanning mills, scales and all necessary belts, sheaves, trucks, cups, etc., complete for an elevator of 200,000 bushels handling capacity.

The town of Kearney, Neb., has a water power equal to that of 600 horse-power, which is being improved by the Kearney Canal Company. The canal is sixteen miles long, and the water will be brought into a natural reservoir on the hillside, containing forty-three acres of land. This reservoir will be thirty feet in depth in the deepest place, which will be sixty-seven feet above the Union Pacific Railway track. This will, when completed, be a fine location for a large flouring mill.

On the evening of Aug. 21, Oscar Rudolf, an employee in the grist mill at North Freedom, Wis., was married to a Miss Crawford, of the same place. Saturday morning the bridegroom stepped into the yard adjoining his home for the purpose of shooting a chicken for dinner. A few moments after his departure his bride heard the report of her husband's rifle. Running to the doorway she found her husband dead, a bullet having crashed through his head from one temple to the other. The gun, still smoking, was lying by his side, and the supposition is that death resulted from the discharge of the piece either while Rudolf was loading or in consequence of its falling from his hands. The tragic event caused a great sensation in the village, as Rudolf was widely known and highly respected, and universal sympathy is felt for the bride so suddenly left a widow. Rudolf was about 25 years of age.

The contract for the new elevator at Washburn, Wis., has been let by the Chicago, St. Paul, Minneapolis & Omaha Railroad company to J. T. Moulton & Son, of Chicago. The contract price is \$225,000, and work is to begin immediately, bids for the lumber to be used in the structure having been asked for from the lumber firms here. Transportation of material and supplies has already been arranged. This elevator will be of the same construction and nearly the same size as elevator B at Duluth. Its capacity will be nominally 800,000 bushels, though it will be able to hold somewhat more than that, and will be used entirely for the storage of corn. Owing to the formation of the bottom of the bay at Washburn, the house must of necessity be built on crib work raised twenty feet from the bottom of the bay which makes the construction more costly than it otherwise would be. For these under-water cribs alone, 2,000,000 feet of 12x12 timber, 10,000 cords of rough stone, and an immense quantity of iron bolts will be needed. The elevator will be ready for the

shipment of corn next season. Capt. R. D. Pike, of Bayfield, has contracted to furnish 2,000 cords of the stone for the elevator. This will give employment to about fifty men at the quarry until the close of navigation.

The following are among the many orders received by the Case Manufacturing Co., Columbus, O., since our last issue:

From M. Doan & Son, Anamosa, Ia., a full line of rolls etc., for a complete roller mill of 75 bbls. capacity; from Chas. Haney, Wilber, Neb., through A. L. Strong & Co., Omaha, Neb., for all necessary machinery for the remodeling of his mill to the roller system; from Geo. Weisel & Co., Alexandria, Neb., through A. L. Strong & Co., Omaha, for a lot of machinery for some changes in their mill; from Cameron & Dean, Brookfield, Mo., for rolls; from P. H. Rhynard, St. Henry, O., for two pair rolls, with patent automatic feed; this is in addition to a previous order from this gentleman; from David Cooper, East Bloomfield, N. Y., for rolls; from H. M. White, Warrenton, Va., for additional machinery; from W. H. Bonesteel, Janesville, Wis., for 2 pairs of rolls; from James Allen, Greenport, N. Y., for rolls; from J. T. Burkett, Waterloo, Ia., for a line of machinery to be placed in the mill of Bridgeman & Reeve, Columbia, Dak.; from A. L. Strong & Co., Omaha, Neb., for a line of machinery for the mill of D. D. Emerson, Loup City, Neb.; the contract of H. Winnifield, Canton, O., for a full line of rolls, centrifugal reels, bolting reels, etc., for a full roller mill on the Case system; from Messner & Mathews, Pleasant Plain, Ia., for additional rolls; from C. D. Wood, Winnamac, Ind., for 2 pair rolls with automatic feed; from B. A. Haycock, Richland, Iowa, for 2 pair of rolls with patent automatic feed; from A. L. Tone, Lewis Centre, O., for rolls; from W. A. Huffman Implement Co., Fort Worth, Tex., for 1 Little Giant break machine to be shipped to L. P. Adamson, Weatherford, Tex.; from Holmes & Johnson, Goshen, O., for 8 pair rolls with patent automatic feed; from the Demopolis Oil Co., Demopolis, Ala., for 2 pair rolls with patent automatic feed; from Freeman & Alford, Shoals, Ind., for machinery; from A. L. Strong & Co., Omaha, Neb., for 6 pair of rolls with patent automatic feed; from Kerfoot Bros., Des Moines, Iowa, for 1 pair of rolls with patent automatic feed to be shipped to Chickasaw, Iowa.

The Grayville (Ill.) Independent for July 30 says:

One year ago last May, the announcement was made that the milling and grain firm of Lanterman & Stewart had suspended payments with liabilities of \$50,000, and assets estimated at \$30,000. In 1877 and 1878, a panic in the wheat and flour markets caused the firm a loss of many thousand dollars, which, together with heavy expenditures made from new and improved machinery and large additions to the mill, put upon them a heavy debt, which they had, up to the time of the suspension, been gradually reducing, and the suspension would not have been necessary but for the death of Mr. Stewart, which had occurred but a few weeks previous, making necessary an immediate settlement of the partnership business. In August following, Mr. Lanterman succeeded in executing an agreement between himself, as the surviving partner, and the creditors, in which he agreed to operate the mill for the benefit of the creditors for one year from the 1st day of July 1884, and during that time to pay one year's interest on the entire indebtedness, the creditors on their part obligating themselves that no suit should be brought against Mr. Lanterman, surviving partner, during the time, to collect any of the debts. During the year the mill made above expenses about \$5,000, which, taking the bad year and other things in consideration, was doing well. An effort was made to continue the agreement for another year, but the refusal of several of the creditors to agree to it, made it necessary to make the assignment, which was completed Monday, Messrs. J. B. Jolly and T. G. Parker being the assignees. The creditors are nearly all residents of Grayville and vicinity, the number being in the neighborhood of fifty. The mill has been shut down, which will prove very unfortunate for the city and community, and is to be regretted. An exchange business will be continued by the assignees, however, until the mill is disposed of. On August 19th, the property, consisting of the mill, two warehouses, and valuable city lots, will be sold for the benefit of the creditors. Mr. Lanterman has the sympathy of the community, and the belief is general that he has made every effort in his power to save the creditors from loss.

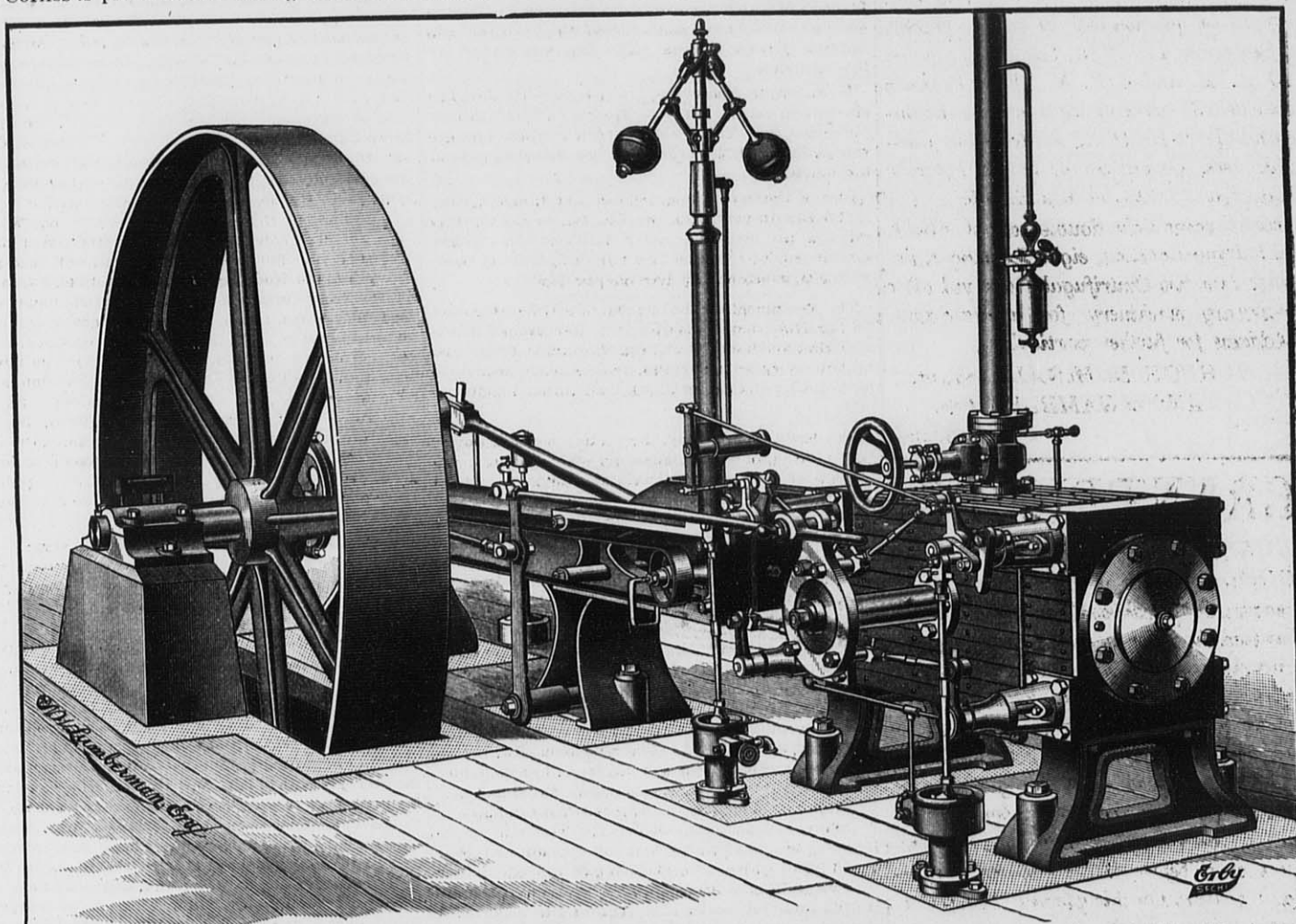
THE REYNOLDS' IMPROVED CORLISS ENGINE.

The use of steam power in flour mills and other factories in the west is so common, and the cost of fuel in most locations is so important an item, that steam users are vitally interested in everything pertaining to that economy in fuel, which is in the majority of cases an absolute necessity. In addition to the matter of economy there are also the accompanying requirements of regularity of motion, simplicity, strength and durability in use. In meeting all these essential requisites the Corliss type of engine has been the most uniformly successful, and its enduring popularity is manifest proof of its superiority to other types of automatic engines. And as the Corliss is pre-eminent among automatic

chanism is entirely independent of the valve motion and the least possible power is consumed in operating it.

"The general appearance of the engine will be best understood by reference to the illustrations. The cylinder which is firmly bolted to the frame, is cast of hard, close, iron, and arranged with the exhaust chambers completely separated from its walls, thus lessening the loss from condensation within the cylinder to a very appreciable extent; it rests on heavy cast iron cylinder feet, which are secured to the foundation by heavy anchor bolts. The frame or bed is made in two pieces, which are accurately fitted and securely bolted together—one piece containing the slides and forming the cylinder front cylinder-head, the other portion being cast

it has been successfully run at speeds hitherto considered impossible for engines of this type. The piston is as light as consistent to have proper strength, and has unusually large wearing surface. It is provided with improved elastic packing that will make a perfect steam joint, and at the same time move with the least possible friction and wear. The design of the cross-head is such that its support on the sides is directly under the vertical center of the cross-head pin, thus completely avoiding the springing and final breaking of the piston rod—an accident that frequently happens to engines where the cross-head pin is placed forward of the vertical and horizontal center of the cross-head, which is done on many engines having a vertical cross-head. Any wear upon the



engines so is the Reynolds' Corliss pre-eminent among the engines which are designated as Corliss engines. It was the pioneer Corliss engine built in the west, and its success has been uniform from the start, and the demand for it shows no signs of abatement. The accompanying illustrations and the following description are taken from the handsomely illustrated catalogue just issued by the builders. The makers say: "Aside from the superior material and workmanship, and the high degree of skill employed in constructing these machines, the principal features of the Reynolds' Corliss engines are, the peculiar liberating devices of the valve-gear, and the arrangement of the regulating mechanism. There is no other arrangement of the governing device that has the delicate sensitiveness, perfection, and accuracy of control, as that found in our machine. This is easily explained by the fact that the regulating me-

chanism is entirely independent of the valve motion and the least possible power is consumed in operating it. The general appearance of the engine will be best understood by reference to the illustrations. The cylinder which is firmly bolted to the frame, is cast of hard, close, iron, and arranged with the exhaust chambers completely separated from its walls, thus lessening the loss from condensation within the cylinder to a very appreciable extent; it rests on heavy cast iron cylinder feet, which are secured to the foundation by heavy anchor bolts. The frame or bed is made in two pieces, which are accurately fitted and securely bolted together—one piece containing the slides and forming the cylinder front cylinder-head, the other portion being cast

solid with the main pillow-block. The pillow-block is very heavy and strong, having a broad bearing on the foundation and secured by heavy anchor bolts, same as the cylinder end; it is also provided with effective means for taking up wear, in the main journal. At the center of the bed, and directly under the slides, is another support, which gives additional solidity to the frame, and renders any springing or vibration impossible. The main shaft is of wrought iron and made from selected scrap, its diameter being about one half the diameter of the cylinder. The journals and bearings are of ample proportions to insure the greatest strength and longest wear, with the least possible friction. The crank-pin, cross-head pin, piston rod and all pins for the valve connections are made of steel; they are finely finished and perfectly fitted to standard gauges. The entire machine is so carefully and strongly built, that

cross-head gibs or slides is readily taken up by the improved adjustable devices peculiar to this engine. The main connecting rod is usually strong, and its straps, gibs and keys are heavier and stronger than those of any other engine in the market. The crank is exceptionally deep and massive, is bored so as to have a forcing fit upon the shaft, is pressed to place by a powerful screw press, and secured by a steel key. The steel crank pin is likewise pressed into place and firmly riveted on the back side of the crank. The governor or regulator is of the well known fly-ball type, but embodying in its details many improvements, especially adapting it to the engine and the cut-off employed, its sensitiveness to attempted changes of speed, and its promptness in accurately adjusting the cut-off to meet changes of load and steam pressure, leave nothing to be desired. The joints are composed of the best bronze gun metal

working upon steel pivots, the automatic connections are direct and positive, and although entirely independent of the cut-off valves, as regards holding or driving them, the regulator maintains perfect control of these valves, and determines the points of cut-off with unfailing accuracy.

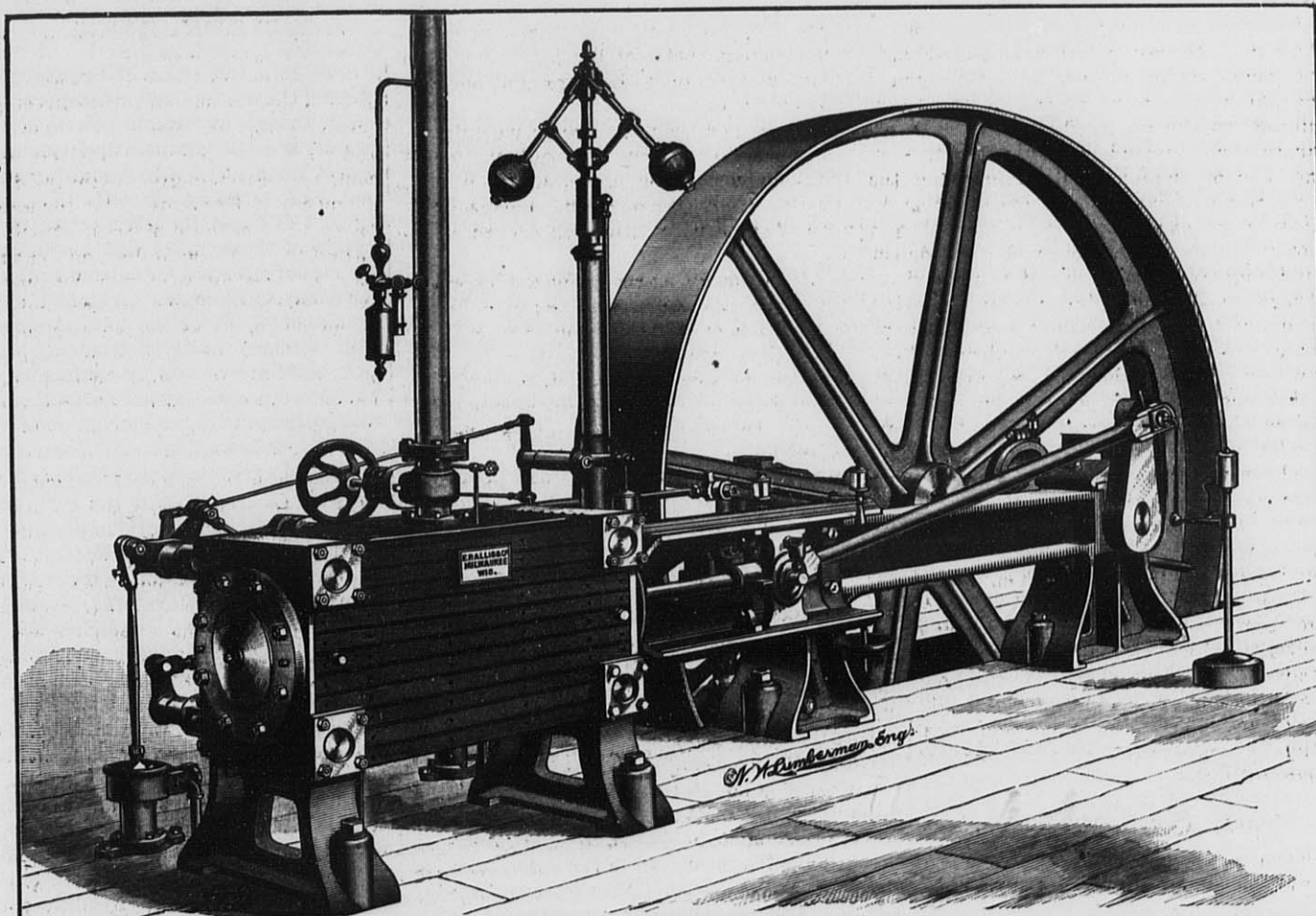
The most distinctive feature of this engine, and from which it derives the name of the 'Reynolds' Corliss, more particularly than in any other detail, is embodied in the design and construction of the valve-gear. The valves themselves have *double* the wearing surface ordinarily found on the Corliss valve, thus entirely and effectually preventing the cutting and wearing of the valves and valve seats, which will occur where small wearing surfaces are exposed to con-

the valves my means of four small connecting rods. The exhaust valves are at all times positively connected with the wrist-plate, and the steam valves are always opened by positive connection, but are closed by means of the vacuum dash-pots. The steel catches for opening and liberating the steam valves are made of hardened steel and arranged so as to give *eight wearing surfaces on each piece*, without re-dressing or re-tempering. This is a novel and valuable feature found on no other engine, and a very important one where engines are located out of the reach of a machine shop. The liberation of the valves for cutting off steam, is effected by means of hardened steel blocks which are controlled by the regulator, and to the peculiarities of this device, as found only on our engine, is

Further particulars, and a copy of their new catalogue, may be obtained by writing to Messrs. Edw. P. Allis & Co., Milwaukee, Wis.—*From the Miller and Millwright.*

A WORD TO AMERICAN MILLERS.

The time has now come when it is advisable to suggest to American millers one or two things that need their earnest and speedy attention. A short harvest in America, a good one in England, the past low prices of flour, the determination of English millers to spare no pains to exclude American flour from our markets, all these and several other things combine to make the coming time one of crisis. English bakers want American flour, and if possible will have it; but we are never sure unless we order direct or from



tinuous pressure and motion. The valves are simple cast iron blocks of cylindrical form, and are so arranged that they require no springs to hold them in place; they rest in their seats perfectly free to move, and entirely unhampered by yokes or other contrivances; they are driven from one end by simple T heads, formed on the inner ends of the valve stems, so that there is absolutely nothing inside of the steam chest but the valves themselves, and each one composed of one piece of iron only; by taking off the back bonnets (by removing four tap bolts) any one of the valves can be taken out without disturbing or altering a single adjustment of the valve-gear. The fact will be appreciated by engineers who are running engines they are compelled to dismantle every time they examine the valves and valve seats. The wrist-plate, to drive the four valves, is mounted upon a large substantial bearing, bolted to the side of the cylinder, and drives

due its remarkable uniformity of speed. In the construction of the ordinary Corliss valve-gear, the old style crab-claw and liberating hook is used, and this as usually constructed, varies the pressure upon the regulator to effect liberation; thus at early points of cut-off, the pressure required to detach the hook is very great; and with late points of cut-off, the pressure to effect liberation is much less. With the arrangement used on the Reynolds' Corliss engine, the pressure required upon the regulator to effect liberation is very much less than with the old crab-claw, and in addition it is *absolutely* uniform for all points of cut-off. As a result the cut-off is prompt; and in strict accordance with the indications of the regulator. The general proportions of the valve-gear, steam ports, etc., are the results of matured experience, and are well calculated to insure the maximum economy of performance."

very large agents that we can get the article we require, and we appeal to American millers to assist us. But to do this two things seem essential on the part of the millers across the Atlantic; first, simplification and continuity of their brands; secondly, some method of sealing up the flour so that when we receive it from our flour factor in England we may be absolutely certain that no one has tampered with it. American brands, even from the best mills, are a perfect mystery to us. The same flour comes to this country with different names. A flour known in the north under one brand is known in the south under another very different. This should not be allowed to continue. Every large milling firm that exports flour should select some system of branding, either using numbers or letters or fancy names, and *stick to them*, and as far as possible let us have the same fixity of quality. Let the quality of every brand never vary, so that we may buy a 'par-

ticular brand without fear of being deceived as too often we are now. We order a stone and get a brick. The same flour should never bear two names.

Now, as to sealing the flour. There is so much fraud both in mixing inferior English flour with good American and palming the mixture off in American sacks, as American flour, that it is surely the interests of American millers to stop this. Again, in some cases English flour *in toto* is sold as American by being placed in American bags. To remedy this state of things, we would suggest to our American friends the following:—Let each export miller secure a trade mark for use in this country, and under our present patent law, the cost is trifling. Next, let them so pack their flour as to have only one means of being emptied and by use of a string tie up this, and with a *lead seal* securely fasten the ends of the string. This seal should bear the trade mark on one side, and the name of the miller, brand of the flour, and date of milling, on the other. This could be so arranged that it would be impossible for any one to open the bag without breaking the seal. Every miller could put his secret mark, either on the bag, the string, or the seal, and then by judicious keenness on this side detect any fraudulent attempt at imitation, and, in case of need, prosecute and imprison the scoundrel who seeks to steal his name or brand. Lastly, let export American millers advertise in the trade papers of this country their brands and trade marks, and modes of sealing flour in *facsimile*, so that every English baker by looking at his trade paper could compare the wood engraving of the leaden seal with the real seal itself. Let American millers invite English bakers to send any doubtful seals to one of their English agents. By some such simple means as these, American millers would be perfectly safe from fraud, and consolidate their flour so firmly in our markets that nothing could remove it. We shall be glad to hear what the American millers have to say about our suggestions. Our pages are open for ventilation of this subject. — *The British Confectioner and Baker*.

INCREASE OF RAILROAD SPEED.

President Graff, of the American Society of Civil Engineers, in his address at their recent annual meeting, said:

There has been considerable advance made in the rate of speed upon most of the principal trunk lines. We have to record the fastest short distance, ordinary daily travel, made in the world to the Baltimore & Ohio road, on that part of its line between Baltimore and Washington, where a distance of forty miles is daily covered in forty-five minutes, being an average rate of fifty-three and one-third miles per hour.

A speed equally wonderful, when the long distance traveled is considered, is being daily accomplished upon the Pennsylvania Railroad from New York to Chicago, a distance of nine hundred and twelve miles; the average running time made is a little over thirty-eight and one-half miles per hour.

From a table recently published, we learn that the Pennsylvania road runs trains from New York between Germantown Junction and Philadelphia, eighty-four miles, at the average rate of forty-nine and four-tenths

miles per hour. The fastest English trains for about the same distance (eighty miles) are run at the rate of forty-seven and one-eighth miles per hour. Upon the French roads, for runs of about the same distance, the fastest record is forty-four and one-third miles per hour.

By way of comparison of the early and present locomotives and speed of travel, the Baltimore & Ohio Railroad, over whose tracks we have been brought to this spot, will afford a good example.

The first locomotive built in this country to carry passengers was constructed by the late Peter Cooper, and commenced running in 1830. Its weight was less than one ton, drawing one car containing thirty-six passengers, at the rate of thirteen miles per hour.

To-day trains pass over the road of the same company between Baltimore and Washington at the rate of fifty-three and one-third miles per hour.

The last and heaviest locomotive built has just been finished by the Baldwin Works, Philadelphia, weighs about sixty-four tons has ten driving-wheels, and a capacity to draw 500 tons up a grade of 105 feet to the mile.

Cable roads for street traffic are increasing in number, and are now in use in San Francisco, Chicago, Detroit, and Kansas City. Several lines are being constructed in Philadelphia; the general plan which originated in San Francisco in 1873, with modifications to suit the particular locality, is the one usually adopted.

The elevated road just completed in Brooklyn is, I believe, the only one of that kind finished during the past year.

ITEMS OF INTEREST.

To correctly judge of flour for its strength is difficult; the ordinary means of washing out the gluten, and judging by the quantity and color of the same, is in a degree misleading, and the only safe test is undoubtedly the baking test. Evidently recognizing this fact, the flour merchants and millers of Manchester invariably make this test, and seldom think of selling flour without showing samples of bread made therefrom, so that the buyer can judge the former from the color, texture and size of the loaf. This is an innovation, it is true, being only a few years old; it was brought about by the keener competition of foreign flour, and the introduction of improved roller milling. Perhaps we shall shortly see this system introduced in London, which, as a flour center, is more important than either of the above named. London is, however, very conservative in these matters, and it will take some time before such an innovation is entertained. But what an interesting, not to say instructive, sight it would be to see samples of bread made from London-made flour and from foreign flour side by side.—*Millers' Gazette* (London).

THE *Western Druggist* says there is a largely increased demand for the gum of the eucalyptus tree, on account of its effect in removing scales in steam boilers and in preventing rust and "pitting." Extensive eucalyptus forests are to be planted in California with the object of supplying the demand.

MILLING STATISTICS IN GERMANY.—According to the most recent statistics of the

German Empire the number of establishments with the number of employes for each mill and the total of the respective classes is as follows:

Mills employing from	Number of mills.	Total number of employes.
6 to 10	626	5,065
11 to 50	568	10,661
51 to 200	31	2,558
201 to 300	2	539

In 39,288 mills the help employed varies between 1 and 5, and the total number of these employes amounts to 87,639. In addition to this we are told 11,596 mills which are operated by the owner alone without any help whatever. The motor power offers some interesting figures, in which water seems to predominate:

Wind motors are given as.....	18,565
Water motors are given as.....	33,069
Steam motors are given at.....	1,797
Gas and hot-air motors are given as.....	18
Locomotives are given as.....	37

A very instructive series of figures indeed, as showing the economical utilization of the cheapest, though unreliable powers of wind and water, and the comparatively small percentage of steam engines in the milling establishments of Germany. But the most interesting part of these statistics treats of the ownership of these mills and teaches in a short series of figures a large lesson in political economy. Thus we are told that the ownership of 51,000 of the total number of mills in Germany is divided among 108,007 persons; 1,004 are owned by companies, the stockholders representing 8,300 persons; agricultural societies with a membership of 1,692 own 78 mills; 20 belong to communal corporations and 9 belong to the state.—*Milling World*.

ON the St. Lawrence route the grain shipping trade needs some very important improvements to make it a full success. The tranship service at Kingston is unsatisfactory, there being neither elevators nor sufficient storage places. The river freights are too high, and the wharfage charges at Montreal in excess of those at New York, Boston, Portland, Philadelphia and Baltimore. However detrimental this may be, the limited exports of grain through the St. Lawrence are chiefly due to the small import trade of Canada. It is evident that a vessel which takes a cargo to one of the Atlantic ports can ship our grain on lower terms than a vessel that goes to Montreal in ballast. To take the grain export trade of the West from the Atlantic ports, Canada has spent lots of money on canals, but it has failed in its object for the above named reasons.

EXPORTS OF BREADSTUFFS.—A statement lately issued from the bureau of statistics shows that, during the twelve months ending June 30, 1885, the quantity of Indian corn exported from the United States was 51,351,585 bushels, against 44,799,061 bushels during the preceding twelve months. But the value of the corn shipped last year was only \$27,624,123, against \$27,333,558 the previous year. That is, while the quantity increased by more than six and a half millions bushels, the value increased by less than three hundred thousand dollars. Of wheat the export last year was 82,449,014 bushels in quantity and \$71,088,456 in value, against 68,241,759 bushels in quantity and \$72,901,191 in value the previous year. That is, while there was an increase last year of more than fourteen millions bushels in quantity, there was an actual decrease of not greatly less than two millions dollars in value.

In the case of wheat flour the showing is somewhat better. The export last year was 10,347,629 barrels, valued at \$50,619,158, against 8,708,152 barrels, valued at \$48,325,582, the year before. The total value of the exports of breadstuffs during the last fiscal year was \$155,014,860, against \$155,507,907. There appears therefore, a difference in favor of the previous fiscal year in the value of breadstuffs exported but the difference was a small one—of less than half a million dollars. During the last six months, however, the value of the exports was about eight and a half millions greater than during the corresponding period of the previous year. This, in view of the low prices, is a very gratifying improvement.

A NOVEL INVENTION.—The New York *Shipping List* states that a patent has been issued to a Gentleman of Gallipolis, O., for an invention that seems fair to rank with the sewing machine, the telephone, etc. It consists of a pair of scales which announces, with unerring correctness, the value of any number of tons, pounds or ounces at any price. For instance, a ham is placed on the scales, its weight is 12½ lbs, and the price is 12½c per lb. A sliding weight is moved along the beam until it balances the ham. In the notch where this weight stops will be found the worth of the meat in dollars and cents to a fraction. Again, suppose a child comes to the grocery for 50c worth of tea that is selling at 78c per lb. One indicator is set at 50 and the other at 78. The tea is poured into the scoop until the scales balance, when the amount is found to be as correct as if several minutes of valuable time had been employed to weigh it and figure out the price in the old way. The invention can be applied to druggists's scales, stock or letter scales, and will, doubtless, cause a revolution in the scale business generally. A New York gentleman, who saw the first model at work, describes it as perfectly wonderful in its operation, and yet so simple in action that a child can learn to use it in a few moments.

THINGS WORTH KNOWING.

INDESTRUCTIBILITY OF GOLD.—Gold may be said to be everlasting, indestructible. The pure acids have no effect upon it. Air and water are alike prohibited from working its destruction; while to baser metals they are decay, to gold they are innocuous. Bury it through long ages, and when the rude tool of the excavator again brings it to light, while everything around it, and originally associated with it, has returned to dust from which it sprang; while the delicate form which it adorned has become a powder so impalpable as to be inappreciable; while the strong bone of the mighty warrior crumbles as you gaze upon it; while his trusty sword lies a mass of shale rust, the delicate tracery in gold which adorned it, or the finely wrought tiara which encircled the lofty brow of the fair damsel, is there in its pristine beauty, perfect as when it left the workman's hands and became the joy of her fleeting moments. Yes, days, years, centuries, have rolled by; mighty empires have risen and fallen; dynasties that dreamed their power was to be everlasting have passed away; armies have marched, conquered, and become nerveless with decrepit old age; cities teeming with population and commerce have become the dwelling place of the owl and the

bat; the very pyramids themselves, raised in the pride of power, and destined to be forever, have crumbled, and are crumbling, and yet that thin filament of gold has stood unchanged through all these mighty changes. It has withstood triumphantly the destroying hand of time; it is to-day what it was three thousand years ago. Surely it is a noble metal worthy of all admiration.—By Sir Henry Vivian.

MILL GIRDERS.—In a recent paper on mill architecture in the *Journal of the Franklin Institute*, Mr. John Hexamer gave some excellent hints. Speaking of girders he said: "Girders should be solid. When it is necessary to use compound girders, they should be tightly bolted together, so as to leave no intervening spaces. In storehouses, etc., where there is but little vibration, girders may be inserted in the wall by placing them either on brackets or a short distance into the wall, with beveled edges, without any further anchoring. In mills where the amount of vibration is great, Woodbury advises to securely bind the beam to the wall, by embedding in the masonry a flat cast-iron plate with a transverse fin upon each side near the end, one to secure the plate in the wall and the other in a groove across the under side of the beam, firmly secured by wedges driven in at each side of the fin. The bricks in the wall for about five courses above the beam, should be laid dry, and the upper edge of the beam slightly rounded, and an air space should be provided at each side of the beams. Under no consideration should the old-fashioned anchorage of fastening the girder on the outside of the wall with a large anchor plate be used, as when the beams burn through, the leverage brought to bear on the wall will overturn it."

EXCELLENT INTEREST RULES.—The answers in each case being in cents, separate the two right-hand figures of answer to express in dollars and cents.

Four per cent.—Multiply the principal by the number of days to run, separate right-hand figure from the product, and divide by nine.

Five per cent.—Multiply number of days, and divide by seventy-two.

Six per cent.—Multiply number of days, separate right-hand figures, and divide by six.

Eight per cent.—Multiply by number of days, and divide by forty-five.

Nine per cent.—Multiply by number of days, separate right-hand figure, and divide by four.

Ten per cent.—Multiply by number of days, and divide by thirty-five.

Twelve per cent.—Multiply by number of days, separate right-hand figure and divide by three.

To find the time in which a sum of money will double itself at a certain rate of interest divide seventy-two by the rate of interest and the result will be the number of years. For example, at four per cent. money will double in eighteen years; at eight per cent. it doubles in nine years. The rule is correct to within a fraction of a year for all rates from three per cent. upward.

THE RATE OF RECESSION OF NIAGARA FALLS.

Writing to Nature, Mr. Edward Wesson, of Providence, R. I., discusses the question of the rate at which the Niagara Falls recede southward, uses as a basis the outlines of the

falls as determined by the New York Geological Survey of 1842, the United States Lake Survey of 1875, and by Thomas Evershed for the New York Commission in 1883. He finds as the mean of the measurements of a number of sections along perpendiculars from the contone at the date of each survey, for the Canadian falls, 2½ feet per annum for the 33 years ending 1875, 7½ feet for the 8 years ending 1883, and 2½ feet for the 41 years ending 1883. The American fall, measured in ten sections, gave a total mean recession of 37½ feet in the 41 years ending in 1883, which is at the rate of about 10 inches per year. Mr. Wesson says: "I do not know that I have seen any estimate attempted of the relative volumes of water passing over the two falls. From such imperfect data as I have referring to depth and swiftness I should think that the rate of erosion for each fall gave some approximation to the volume of water discharged over each; that is to say, 2½ feet per annum for the Canadian fall, 5-6 foot per annum for the American fall, would signify that the former pours over its brink three times as much water as the latter. At the rates of recession above shown it is evident that at no very remote age the two falls were united in one, and the entire width was about the same as that of the present Canadian fall alone. Moreover, the mean width of the fall, from the time it commenced its work at the "heights," 7 miles below its present position, according to Lyell's statement as to the gorge of Niagara River, was not greater than the present Canadian fall. Adding together the present work done by both falls, we should have about 34 feet per annum as the backward work performed when the entire volume poured over single fall of the width of the present Canadian fall. At this rate 10,000 years would seem sufficient time for the cutting out of the present gorge terminating at the "heights" toward Lake Ontario, instead of Lyell's estimate of 35,000 years. All attempts to calculate the rate of movement proceed on the assumption that the hardness of the limestone and shale, the volume of water and the height of the fall were for the whole distance much the same as they now are; I merely use these same assumptions. It in no wise reflects on Lyell's judgment that he should have erred so greatly in attempting to estimate the rate of regression, while yet the contour of the fall at different periods had not been fixed by triangulation. He was ever the first to lay aside a conjecture when he could lay hold of something more solid in its stead, and it was by his candor and sound judgment in discussing natural phenomena that my interest in such matters was chiefly awakened. The statement made by him that Hooker, his guide in 1841, reported that an indentation of 40 feet had been made in the American fall since 1815 seems to contain the basis on which he estimated the rate of regression for both falls, as this amounts to a little over 1 foot per annum. A reference to the results given by me show this to have been approximately correct for the mean rate at the American fall, but wholly inapplicable when applied to the much more important Canadian fall. A consideration of his section of the Niagara River leads me to suppose that the falls in the earlier part of their history worked even more rapidly than now in undermining the brink.

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ANNOUNCEMENT:

WM. DUNHAM, Editor of "The Miller," 69 Mark Lane, and HENRY F. GILLIG & Co., 449 Strand, London, England, are authorized to receive subscriptions for the UNITED STATES MILLER.

We send out monthly a large number of sample copies of the UNITED STATES MILLER to millers who are not subscribers. We wish them to consider the receipt of a sample copy as a cordial invitation to them to become regular subscribers. Send us One Dollar in money or stamps, and we will send THE UNITED STATES MILLER to you for one year. SEE COMBINATION OFFERS ON OTHER PAGES.

The United States Consuls in various parts of the world who receive this paper, will please oblige the publishers and manufacturers advertising therein, by placing it in their offices, where it can be seen by those parties seeking such information as it may contain. We shall be highly gratified to receive communications for publication from Consuls or Consular Agents everywhere, and we believe that such letters will be read with interest, and will be highly appreciated.

TO ADVERTISERS.

Milwaukee, Wis., Sept 1, 1885,

To Those Interested in the Flouring Trade:

THE UNITED STATES MILLER is now in its tenth year, and is a thoroughly established and much valued trade paper. It has a large regular list of domestic and foreign subscribers. It is sent monthly to United States Consuls in foreign countries, to be filed in their offices for inspection by visitors. It is on file with the Secretaries of American and European Boards of Trade for inspection of members. Aside from the above, thousands of SAMPLE COPIES are sent out every month to flour mill owners who are not subscribers, for the purpose of inducing them to become regular subscribers, and for the benefit of those advertising in our columns. Every copy is mailed in a separate wrapper. Our editions have not been at any time since January, 1882, less than 5,100 COPIES each, and are frequently in excess of that (see affidavit below). We honestly believe that the advertising columns of the UNITED STATES MILLER will bring you greater returns in proportion to the amount of money invested than any other milling paper published. Advertisers that have tried our paper for even a few months have invariably expressed themselves well satisfied with the results. Our advertising rates are reasonable. Send for estimates, stating space needed. The subscription price of the paper with premium is One Dollar per year. Sample copy sent free when requested. We respectfully invite you to favor us with your patronage. We shall be pleased to receive copies of your catalogues, and also trades items for publication free of charge. Trusting that we may soon be favored with your orders, we are,

Yours truly,

UNITED STATES MILLER.

E. HARRISON CAWKER, Publisher.

THE census just completed shows that St. Paul has 111,397 inhabitants and Minneapolis 129,200. Minneapolitans feel jubilant over the result.

THE *Manufacturers' Record*, Baltimore, Ohio, is responsible for the assertion that 166 new flouring mills have been built in the Southern States since January, 1885.

It is now conceded that on account of the dry weather in Great Britain the crops of wheat, etc., will fall considerably below the estimates made heretofore.

THE contract has been let for building the line of railroad for the Wisconsin Central Railroad from Schleisingerville to Chicago. The grading is to be completed by Dec. 1.

THE Pennsylvania Millers Association will hold their regular annual meeting at Bethlehem, Pa., Oct. 13, next. Valuable papers will be read and an excursion made among the mountains by rail.

THE Wisconsin State Fair will be held at Madison, Sept. 7-11. The Managers have spared no effort or expense to make the State Fair this year, one of the very best ever held.

WE have received the initial number of *The Black Diamond* a paper published in the coal interest in Chicago, Ill. It is neatly printed, well edited and will, no doubt, prove a valuable auxiliary to the trade it represents.

THOSE of our readers who may have use for a boiler purger will do well to consult H. P. Graves' advertisement on another page. This purger has been in use in the office where the UNITED STATES MILLER is printed (Riverside Printing Co.) for the past year, and it has given entire satisfaction.

THE Fifth Annual Milwaukee Exposition opens Sept. 2. The attractions, we are assured, will be greater and grander than ever. Every resident of Wisconsin should, if possible, make it a point to visit this Exposition. The information and amusement there to be obtained is well worth the cost and trouble of a visit. Railroads will give excursion rates, we understand, to parties desiring to attend.

THE WHEAT CROP.

According to the August report of the U. S. Department of Agriculture, the crop of winter wheat is 215,000,000 bushels, and probable spring wheat 142,000,000, making a total wheat crop for 1885 of 357,000,000. It is estimated that taking into consideration the large surplus left over from the 1884 crop, that there will be from 120,000,000 to 130,000,000 bushels of wheat available for export, most of which will, no doubt, go abroad in the shape of flour. The crops of corn, oats, etc., are larger than usual, so there will be no dearth of grain for feeding stock. The quality of winter wheat is very good; while that of spring wheat is probably below the average. The prospects do not point towards high prices.

WORTH THINKING ABOUT.

Do you think because you are a miller, blacksmith, or machinist, that it is necessary to carry the marks of your trade on your clothes and person from your place of labor through the streets to your home or boarding house? Is there anything particularly edifying to the friends you may meet upon the street, male and female, in the sight of dirt-begrimed clothing and skin? We do not be-

lieve there is, and we do not believe that any person ever yet advanced their interests by neglecting to keep themselves tidy. Let the mechanic who has been in the habit of carrying the marks of his trade around with him everywhere and taking a sort of pride in his general untidiness stop and think a bit and run over in his mind the list of his fellow-workmen who have been, as he thinks, especially fortunate in securing promotion and better positions generally, and if his memory serves him rightly, he will remember that those were the very chaps that used to wash up and take off their overhauls before leaving the shop and starting for home, and that they were always considered regular "old grannies" because they used to be so particular about taking care of their tools and disliking to lend them. It does not make a man any the worse mechanic for being neat about his person, and argue as you will, the world as it goes has a greater respect for a neat, clean person than it has for a dirty one.

GEO. T. SMITH MIDDINGS PURIFIERS AND IMPROVED CENTRIFUGALS AT THE STATE FAIRS.

The Geo. T. Smith Middlings Purifier Co. have perfected arrangements to have their recently improved centrifugal reel, with scalper attachment, in practical operation at each of the following named State and district fairs on the dates following:

Michigan, Kalamazoo, Sept. 14-18; Ohio, Columbus, Sept. 1-5; Tri-State, Toledo, Sept. 8-13; Northern Indiana, Southern Michigan, South Bend, Ind., Sept. 22-26; Indiana, Indianapolis, Sept. 29-Oct. 4; Iowa, Des Moines, Sept. 4-11; New York, Albany, Sept. 10-16; Nebraska, Lincoln, Sept. 11-18; Pennsylvania, Philadelphia, Sept. 23-Oct. 7; Wisconsin, Madison, Sept. 7-11. At both the Southern Expositions at Louisville, Ky., which opens Aug. 15, and which continues until Oct. 24, and the St. Louis Exposition, from Sept. 9-Oct. 24, large and interesting exhibits of centrifugals, with and without scalpings, purifiers and dust collectors, will be made. The Company will be pleased to have millers and mill men make their headquarters with them and have their mail forwarded to their care, if they desire, while they are visiting the exhibitions at any of the places named above. The exhibits will be attended by men whose especial business will be to entertain visitors and furnish information concerning the machines, without regard to whether inquirers are intending purchasers or not.

MILWAUKEE NOTES.

The Val. Blatz Brewing company is erecting a large elevator at the corner of Broadway and Division street. The building is to be 60x120, and 90 feet high, and will have a capacity of 400,000 bushels of barley. A malt kiln, 50x60 feet, is also being erected, and will be supplied with the latest improvements for drying malt.

The task of compiling the statistics of manufacturing interests of the city has been completed by City Clerk Porth. The following recapitulation of the capital invested in and the value of the products of the city's various manufacturing enterprises will be of interest:

During the year the total value of iron products and manufactured articles of iron in the city reached \$3,130,500, and the value of leather and manufactured articles of leather was \$4,500,400.

There were 3,300 wagons, carriages and sleighs manufactured, representing a value of \$412,700.

There were 960,420 barrels of beer manufactured, valued at \$6,045,336; and 400,000 gallons of whisky, at a total value of \$500,000; 3,907,000 gallons of vinegar were made, all being valued at \$426,560.

The product of woolen fabrics is estimated at \$115,000; of earthenware, \$33,500, and of drain tile, \$38,000.

The number of cigars and cigarettes manufactured during the year was 49,318,800, estimated at \$1,397,436, while the total amount of all other tobaccos manufactured was 3,637,000 pounds, an aggregate value of \$858,000.

The flouring mills of Milwaukee show up well, having turned out 1,057,953 barrels of flour during the year, representing a money value of \$5,094,479.39.

All other manufactured articles are classed under one head, and the value of their products is estimated at \$11,413,359.63.

The total value of the real estate and machinery used in the local manufacturing enterprises is \$8,395,066.58; of the stock and fixtures, \$7,552,851.23, showing a total investment of \$15,947,917.76. The amount of wages paid for labor performed in the enterprises cited above during the year, was \$6,210,165.72, while the number of men employed is set down at 15,156.

The total value of the products of the local manufacturing interests, according to the reports received by the city clerk, is \$34,069,271.02, while the total amount of money invested, including wages paid, during the year, is \$22,158,083.48.

Grain Inspector Black was severely injured Aug. 20th, by being thrown from his buggy.

The Jos. Schlitz Brewing Co., are erecting a house for the exclusive purpose of bottling beer. It will be a one-story building 17 feet high and 164 feet wide by 340 feet in length. The building will cost \$100,000 and will have railroad connections in the building with all railroads entering Milwaukee. When completed it is said that it will be the largest and most complete bottling plant in the world.

W. J. Stemler, one of the brightest young millers ever graduated from Milwaukee flouring mills, is spending a few weeks vacation here with his many friends.

[Written for the U. S. MILLER.]

"THE MILL IS CLOSED TO-DAY."

Yes, mister—the mill is closed to-day. Why?

O yes; I see you're a stranger in town. Well, sit down on the old mill steps and I'll tell you about it. My name's Jim, and you see, I've been workin' in the mill for Mr. Bowers nigh on to six year, and he says he reckons I know the run of things 'bout as well as he does himself, although he's a mighty clever man. Well, Bowers' wife, one of the most pleasin' women you ever saw, died last spring, and though they'd been married nigh twenty year, they had only one child—one of

the sweetest little girls you ever saw, 'bout four years old. She had the same soft blue eyes and fair hair her mother had, and after the wife died, Mr. Bowers sort o' center'd all his affections on little Jessie, and I tell you, he's a man what's got a big heart in him. Seems as if he couldn't bear to have that child out of his sight a minit. He used to take her on his shoulder every morning and bring her down to the mill, and when he had a bit of time he'd play with her, and tell her baby stories, and when she'd get tired he'd fix up a nice little bed for her on the top of the flour sacks, where he could see her, and let her go to sleep. Yes, lots of times I've seen him slip up to that child while she was sleepin' and kiss her hand so gentle 's not to 'wake her. Oh, I tell you, stranger, he really loved that child too much; don't b'lieve God wants us to love anything in this world too much—leastwise it looks so to me.

Did she die?

O, yes; little Jessie's an angel now, if there be any. This is Monday, and last Thursday mornin' 'long 'bout eight o'clock, I stood in the mill door and saw Mr. Bowers and little Jessie comin' down the street to the mill. They both seemed in high spirits and were chasin' butterflies 'round among the dog-fennels and daisies, and havin' a jolly lot of fun. Bime-by they got to the mill, and she said: "Good mornin', Jim; how do," just as cheerful like as could be. Then all of a sudden she drew her face down 'long as could be, and says: "Jim, I've got somethin' just awful to tell you." "Well, what is it," says I, drawing down my face as long as I could, and tryin' my best to keep from laughin', for she did look so cute like when she drew her face down sort o' solemn. "Jim," said she, "you know that pretty wax doll you gave me last Christmas?" "Yes, little Miss," says I, "What about it?" "Well, Jim," says she, "she's gone; she's been gone for the last three days, and I've looked just *everywhere* for her and I can't find her, and it makes me feel so bad, for I loved Dolly so, and you gave her to me." "O never mind," says I, sort of cheerful like. "May be she's gone and fell into the water and got drowned," says her father. Little boys and girls and dolls must keep away from the water or they're like enough to get drowned. "Oh, I don't believe my Dolly's drowned. It would be just awful if she was—wouldn't it Jim?" "Yes, 'twould," says I, "but never mind; if Dolly's really gone, you may get another some time." "I don't want any other," says she, "I just loved that Dolly, and never could love another, if she's gone." Well, then we sort o' changed the subject, and, after an hour or so, she says: "Papa, I'm sleepy." "All right, my darling," says he "come and get up here and take a nap," and he fixed up a nice place for her on the sacks and covered her up and tenderly kissed her, and as he was about to turn away, she says: "Papa, do you *really* think my poor Dolly's drowned?" "Oh, no," says he, smiling, "dolls don't get drowned. Even if she had fallen in the water she'd float, and may be somebody would find her." "Well, papa dear," says she, "kiss me again before you go; and I do hope poor Dolly will come back to us." He kissed her gently, and she covered up her pretty little face and, I suppose, went to sleep.

Pretty soon we heard some one outside holler "Whoa," followed by a sort of a crash,

and we ran out and saw that Farmer Jones had, in coming along past the mill, with a big load of wood on his wagon, struck a big stone with his hind wheel and broke the axle. We turned in and helped him to rig a pole under the axle, to drag on the ground, so that he could get his load to a place near by where he wanted to unload it. We were gone, perhaps, twenty minutes. We went back to the mill; Mr. Bowers glanced at the spot where he had left little Jessie asleep. She was not there. "My God! where is Jessie?" he almost screamed, and his face turned 'most as white as flour. He seemed to feel that minit, that summat was wrong. Now, right by the side of the mill-stones and over the place where the water runs away from the wheels, a window was open, (it was a pretty warm day). We ran to the window and looked down, and there, in the sort of eddy made by the water as it ran out, we saw the body of poor little Jessie, floating round and round. She, most likely, had gone to look out of the window to see if she could see her doll in the water. We both run around to the side of the mill, but Mr. Bowers was ahead of me, and he plunged in (the water wasn't more'n three feet deep,) and seized her poor wet little body in his arms and brought her out. He ran with her to the doctor's house close by, but it was too late. She was dead. Her father did not shed a tear or speak a word, but there was that in his face which I hope I may never see again—it was a sort of a look of despair—a hopeless sorrow—a broken heart.

Well, on Sunday they buried her. The children sang at her grave and strewed flowers upon it, but her father still carried that awful look upon his face. This morning, I went up to the house and saw him walking among the flower beds, and as he walked his foot struck against something and knocked it out in sight. He stooped to pick it up. "O Jim," said he, "It's Jessie's doll!" and he threw himself on the ground and burst into tears. I reckon the tears must 'a got into my eyes, too, for I had to turn away and as I walked down here towards the mill, everything seemed to be sort o' blurred like, and I don't remember rightly how I got here.

Yes, stranger, the mill is closed to-day; and as I said before, little Jessie's an angel in heaven, if there be any.

CAWKER.

THE EFFECT OF OIL IN BOILERS.

When oil is used to remove scale from steam-boilers too much care cannot be exercised to make sure that it is free from grease or animal oil. Nothing but pure mineral oil should be used. Crude petroleum is one thing; black oil, which may mean almost anything, is very likely to be something quite different.

The action of grease in a boiler is peculiar, but not more so than we might expect. It does not dissolve in the water, nor does it decompose, neither does it remain on top of the water, but it seems to form itself into what may be described as "slugs," which at first seem to be slightly lighter than the water, of just such a gravity in fact, that the circulation of the water carries them about at will. After a short season of boiling these "slugs" or suspended drops seem to acquire a certain degree of "stickiness," so that when they come into contact with the shell and flues of the boiler they begin

to adhere thereto. Then under the action of heat they begin the process of "varnishing" the interior of the boiler. The thinnest possible coating of this varnish is sufficient to bring about overheating of the plates, as we have found repeatedly in our experience. We emphasize the point that it is not necessary to have a coating of grease of any appreciable thickness to cause overheating and bagging of plates and leaking at seams.

The time when the damage is most likely to occur is after the fires are banked, for then, the formation of steam being checked, the circulation of water stops, and the grease then has an opportunity to settle at the bottom of the boiler and prevent contact of the water with the fire-sheets. Under these circumstances a very low degree of heat in the furnace is sufficient to overheat the plates to such an extent that bulging is sure to occur. When the facts are understood it will be found quite unnecessary to attribute the damage to low water. — *The Michigan Manufacturer.*

GRAIN CROPS IN CANADA.

TORONTO, Ont., Aug. 17.—The report of the Bureau of Industries on the wheat, oats, and barley crops of Ontario, based on returns made by 1,000 correspondents up to the 5th inst., has just been issued. The fall wheat crop just harvested has been a good one, both in yield per acre and quality of grain. The average will be about as high as that of the fine crop of last year. The condition of the spring wheat crop throughout the province, though somewhat inferior to that of fall wheat, affords ground for hope of a fair average yield, in spite of a good many adversities. Seeding was generally later than usual, and growth was further retarded by cold, dry weather in May and early in June. Cutting will not be general until the 20th. In the Western Peninsula wheat is exposed to rust, mildew and weevil. Barley, except in a few localities, has been generally heavy and well matured, but the color of the great bulk of the crop has been materially damaged by storms. Probably not far from three-fourths of all the barley in the province was exposed. The accounts of the oat crop are uniformly favorable from every section, and give promise of a high average, though not equal on the whole to the bountiful yield of last year. The following is a comparison between the yield of last year and the estimated yield of this year of the crops: Fall wheat, 1884, 24 bushels per acre; 1885, 23 and a fraction; spring wheat, 1884, 20 and a fraction; 1885, 18; barley, 1884, 27, and a fraction; 1885, 28; oats, 1884, 38.9; 1885, 38.3.

The following extract from *The British and Foreign Confectioner and Baker*, will sound pleasantly to the American flour exporter:

The hold American flour has gained here is due alone to its merits, and not to long forward sales or long terms of payment. We have authority for saying that the best grist flour yet offered in Scotland will not yield more than 94 to 98 loaves per sack, while American pure winter wheat flour from America will give 98 to 100 loaves, and spring flour 102 to 105 loaves per sack. Bakers who put brains and common sense into their business are governed by that difference in output, more especially when it is accompanied by better color, better flavor—qualities found inherent in high grades of flour from single milled American wheat. Of what value to the baker we would ask, is long terms of payment, or an inferior article?

TWEEDLEDUM AND TWEEDLEDEE.

You go upon the Board of Trade
Where margin merchants meet,
And take some little options
On January wheat;
You watch the little ticker,
Till the hands swing round the ring,
Then you'll find your little boodle
Has gone a-glimmering.

That's Business.

You go into a faro bank.
You buy a stack of chips,
And watch the cards come from the box
Which the dealer deftly flips,
When your head is dull and aching
At the breaking of the day,
You see that fickle fortune
Has gone the other way.

That's Gambling.

—Columbus Bohemian.

MILLING PATENTS.

The following list of patents relating to milling interests, granted by the U. S. Patent Office during the past two months, is specially reported by Stout & Underwood, Solicitors of Patents, 66 Wisconsin st., Milwaukee, Wis., who will send a copy of any patent named on receipt of 50 cents.

Issue of June 30, 1885.—No. 321,007, Crushing-roll, Henry J. Chapin, New York, N. Y.; No. 321,030, Roller-mill feed mechanism, William Hutchinson, Ottawa, Ontario, Canada; No. 321,045, Metallic Grinding-ring, John G. Mole, Batavia, Ill.; No. 321,108, Bran duster and cleaner, Levi S. Hogeboom and Henry B. Smith, Three Rivers, Mich.; No. 321,129, Automatic Grain-scale, John F. Milligan, St. Louis, Mo.; No. 321,209, Automatic weighing and sacking machine, F. M. Gladish, Aulville, Mo.; No. 321,236, Combined truck and bag holder, Ebenezer J. Earl, Charlotte, Mich.; No. 321,387, Combined Electrical weighing scale and flour and bran packer, Charles W. Roth, Evansville, Ind.; No. 10,617, (Re-issue), Flour bolt, Noah W. Holt, Buffalo, N. Y.

Issue of July 7, 1885.—No. 321,427, Rolling-mill, Chas. F. Elmes, Chicago, Ill.; No. 321,481, Grain-scales, Alfred J. Buie, St. Louis, Mo.; No. 321,551, Roller Grinding-mill, William H. Wakeford, Baltimore, Md.; No. 321,600, Driving mechanism for Roller-mills, John V. Hecker, New York, N. Y.; No. 321,875, Bolting-reel, Abraham N. Wolf, Allentown, Pa.

Issue of July 14, 1885.—No. 322,080, Mill for hulling grain, Diedrich Uhlhorn, Jr., Grevenbroich, Germany; No. 322,264, Mill feed regulator, Henry R. Deier, Freeburg, Ohio; No. 322,257, Process of drying grain, Henry I. Chase, Philander F. Chase and Henry G. Chase, Chicago, Ill.; No. 322,252, Method of drying grain, David M. Bunnell, Brooklyn, N. Y.; No. 322,305, Grain-bin, John Mason, Francesville, Ind.; No. 322,358, Bolting reel, Robert L. Downston, St. Louis, Mo.; No. 322,400, Grinding mill, Ambrose W. Straub, Philadelphia, Pa.

Issue of July 21, 1885.—Holder for bags, Andrew N. Barnes, Rondout, N. Y.; No. 322,466, Recleaner for grain and seed separators, Abraham Miller, Newark, Ohio; No. 322,700, Wheat scouring and cleaning machine, Frederick Dorsey, Hagarstown Md.; No. 322,715, Bran-duster, August Heine, Silver Creek, N. Y.; No. 322,773, Grinding-mill, Alphonso L. Anderson and William T. Anderson, Tolland, Conn.; No. 322,820, Grain Separator, Israel Hess, Goshen, Ind.; No. 322,824, Seed-cleaner and huller, R. Brent Hutchcraft, Paris, Ky.

Issue of July 28th, 1885.—No. 323,035, Grain scourer, J. L. Harvey, Plover, Wis.; No. 323,040, Reduction mill, H. C. Ingraham, Woodbridge, N. J.; No. 323,057, Grain tryer, T. Maylor, St. Louis, Mo.; No. —, Grain cleaner and grader, S. R. Backus, Toledo, Ohio; No. 323,143, Bolting reel, A. Heine, Silver Creek, N. Y.; No. 323,221, Grain dryer, D. E. Sibley, Chicago, Ill.; No. 323,224, Mouth-piece for pneumatic lifting apparatus for grain conveyors, L. Smith, Kansas City, Mo.; No. 323,225, Mouth-piece for pneumatic grain transfer apparatus, L. Smith, Kansas City, Mo.; No. 323,226, Pneumatic grain elevator and transfer apparatus; L. Smith, Kansas City, Mo.; No. 323,247, Bran-duster, J. W. Wilson, Brookville, Kan.; No. 323,317, Pneumatic apparatus for grain conveyors and attachments, B. Goodrich, Akron, Ohio.

Issue of August 4, 1885.—No. 223,509, Oscillating grain-meter, George B. Howland, Chicago, Ill.; No.

323,561, Feed-mill, Thomas C. Cadwgan, Springfield, O.; No. 323,533, Automatic grain-weighing machine, Carl Reuther, Hennef, Prussia, Germany; No. 323,579, Clothing for Bolting reels, August Heine, Silver Creek, N. Y.

Issue of August 11, 1885.—No. 324,029, Flour-bolt, John Koelner, Terre Haute, Ill.; No. 324,047, Rotary head for grinding mills, Thomas L. Sturtevant, Framingham, Mass.; No. 324,182, Grain dryer, Heinrich Stollwerk, Cologne, Germany; No. 324,187, Flour bolt reel, Vandiver Teague, Lenoir, N. C.; No. 10,634, Grinding-mill, Walter C. Westaway, Beloit, Wis., (Re-issue).

Issue of August 18, 1885.—No. 324,363, Grinding-mill, Mortimer C. Cogswell, New York, N. Y.; No. 324,392, Device for dressing mill-stones, Edwin W. Lockwood, Nevada, I.; No. 324,473, Combined grinding-mill, bolt and purifier, Chas. F. King, Covington, Pa.; No. 324,556, Oat-meal machine, James C. Holloway, San Francisco, Cal.; No. 324,595, Bolting-reel, Henry F. Requier, Asnieres, France; No. 324,668, Combined bag-holder, scale and truck, Jasper Dollison and Ja's Long, Salesville, Ohio; No. 324,737, Grain-dryer, Jesse R. Sitler, Axtell, Kansas.

Issue of August 22, 1885.—No. 325,093, Wild pea and oat separator, James M. King, Rochester, Minn.; No. 325,128, Centrifugal bolting reel, Edgar A. Squier, Tiffin, Ohio; No. 325,170, Ventilator for grain-bins, Ben. F. Harrell, New Marion, Ind.

SPECIAL NOTICE TO ADVERTISERS.

The United States Miller for OCTOBER and NOVEMBER will be sent to ALL the mill owners whose addresses we have (we believe we have the most perfect list in existence), in the following States and Territories: Wisconsin, Illinois, Michigan, Minnesota, Dakota, Nebraska, Iowa, Kansas, Indiana, Missouri, Ohio, California, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Wyoming, Utah and Washington Territories. We will insert advertisements to run until ordered discontinued at the following rates: For each insertion, one page, \$35.00; one-half page, \$20.00; one-fourth page, \$11.00; one-eighth page, \$6.00; smaller ads., \$1.50 per inch, each insertion. We have made great efforts to increase our regular subscription list, and believe that we have as many regular paid subscribers now as ANY milling paper published. Try us and we will serve you to the best of our ability. Get your Orders in Early.

LONDON FLOUR REPORT.

The Trade is steady at about last week's prices. American Millers continue to hold up their quotations for forward shipment, and very little business can be concluded on C. I. F. terms, meanwhile harvest operations continue under the most favorable conditions, many fields are already cleared, and another week of hot sunshine and drying winds will see most of the 1885 wheat-harvest safely housed and threshing commenced. The new wheat, samples of which have already been shown, is of fine quality, but it is doubtful whether much will be fit or ready for grinding before next month. Meanwhile Minnesota flours are becoming scarce on the market, and as bakers will require a large proportion of this class for mixing with the new English flour, the present low price should induce operators to get into stock without further delay. There seems little chance of Minneapolis millers being able or willing to sell this strong flour at anything like present spot prices, and another few weeks will, probably, see this grade almost off the market with, in consequence, a material rise in value. WM. KLEIN & SONS.

London, Aug. 15, 1885.

Under date of Aug. 22, Messrs. Wm. Klein & Co., (London) say: In spite of a heavy drop in New York quotations the last week has seen little alteration in the price of flour on the spot, the business done however has been on a very reduced scale; American C. I. F. quotations may be called fully 1/- per 280 lbs. lower than this day week but are still above the low prices, ruling for the generality of brands on the spot and there is little or no disposition to buy forward at an advance. On the other hand the stocks of spring wheat flour continue to decrease, and being already in small compass and strong hands, there should be no risk in buying them at present prices both for present and future delivery. Harvest-operations continue freely in most districts, but thunder-showers have delayed carrying in some localities so far, however, no damage is reported.

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For it is of as much, if not of more, interest to you as to us.

— OFFICE OF —

Cawker's American Flour Mill Directory

— A N D —

THE UNITED STATES MILLER.

MILWAUKEE, WIS., August, 1885.

TO OWNERS OF FLOURING MILLS:

We desire to revise and correct our list of **Flour Mill Owners**, and therefore beg that you will answer the questions below by **return mail**. This list is used for the purpose of reaching flour mill owners by mill furnishers, engine and water wheel builders, flour and grain brokers, city bakers, insurance companies, publishers of milling papers, and in short by manufacturers of and dealers in everything used in or about a flour mill. You will therefore perceive that it is of great value to **you** to be properly entered in our list. If you are not already a subscriber to the **United States Miller**, we trust you will order your name entered on our subscription list at once. We have sent you sample copies of the paper at various times, and we think that you will certainly admit that it is worth the small sum of a **dollar a year**. We want you for regular subscribers, but whether you do subscribe for the **United States Miller** or not, **DO NOT FAIL TO ANSWER OUR QUESTIONS** by return mail. Address

UNITED STATES MILLER, 124 Grand Ave., Milwaukee, Wis.

What is the name of proprietor, or firm, and name, if any, of mill?

Name Post Office

County State

Do you use water or steam power?

How many barrels of wheat flour can your mill make in 24 hours if you run up to full capacity?

Do you use the Roller or Stone system, or both

Do you make a specialty of making rye flour, corn-meal, oat-meal, buckwheat, or hominy?

Please enclose your business card and oblige us with the names of all mill owners who receive their mail at your post-office, and give us any information that will tend to make our work perfect.

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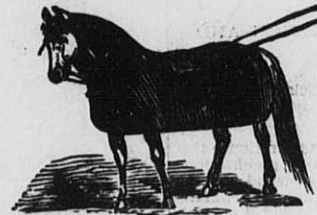
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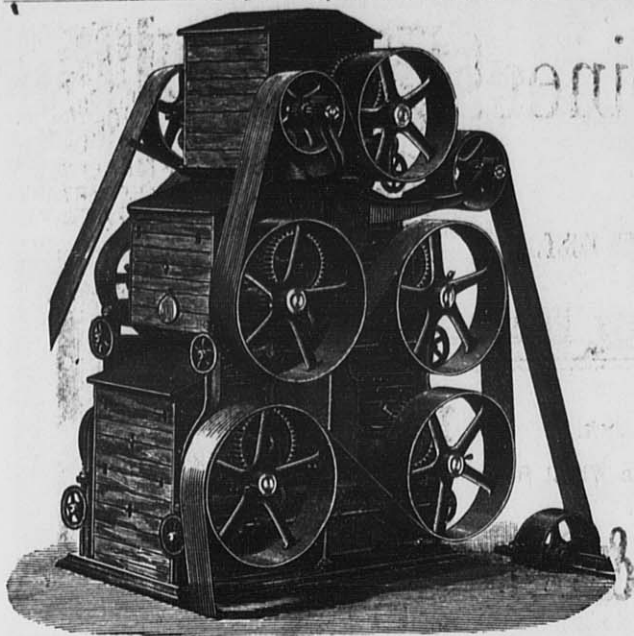
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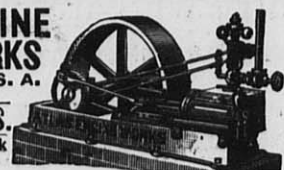
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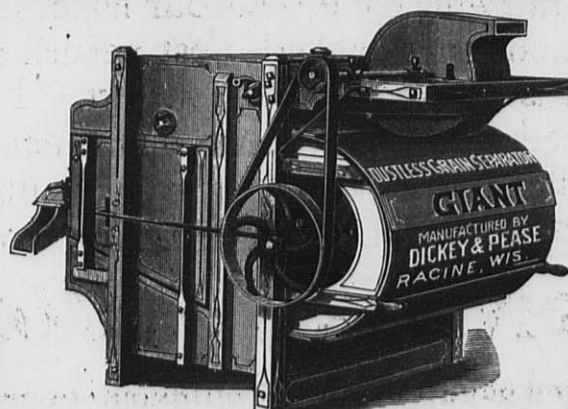
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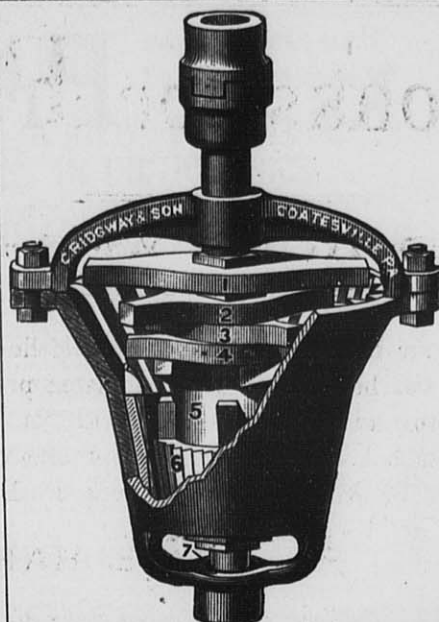
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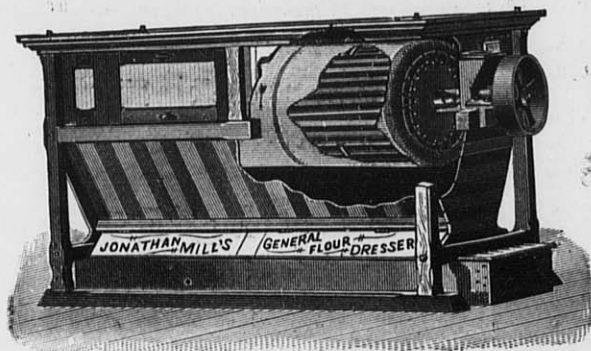
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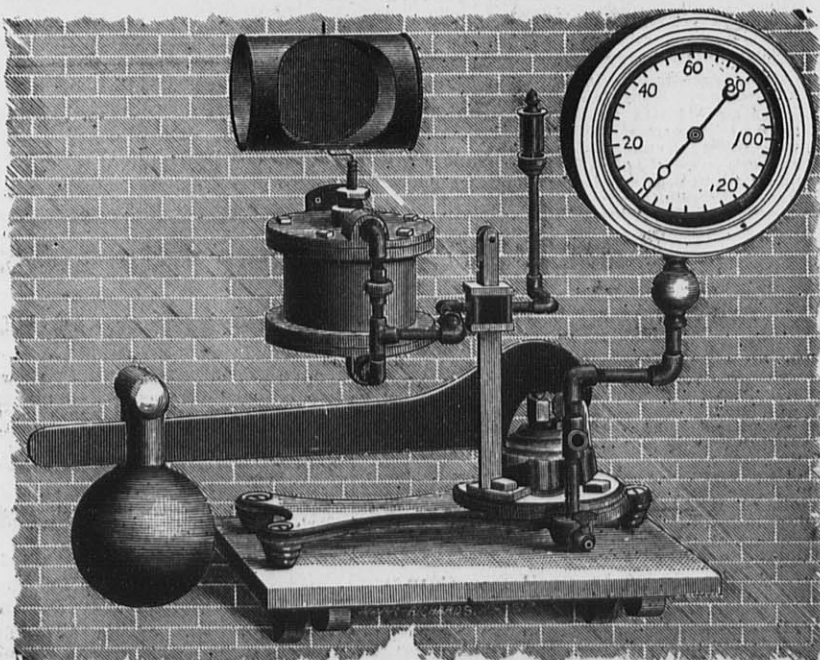
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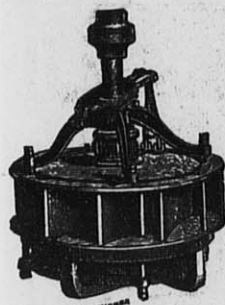
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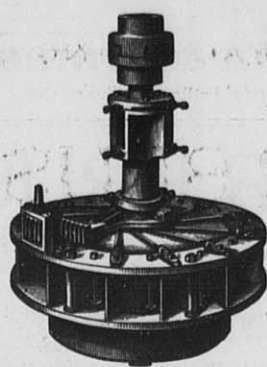
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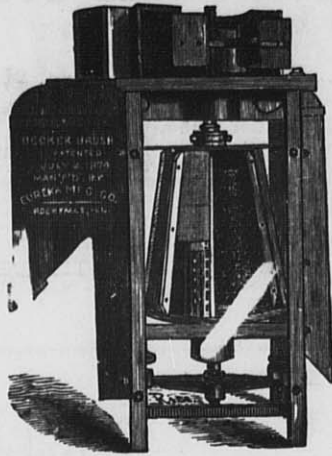
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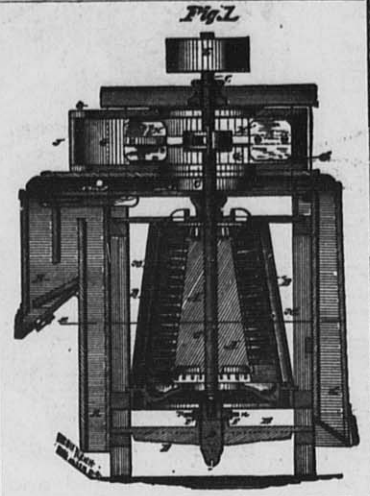
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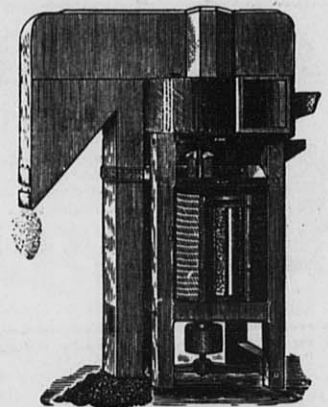
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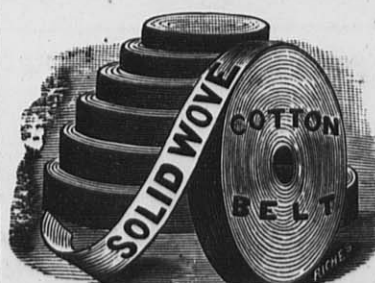
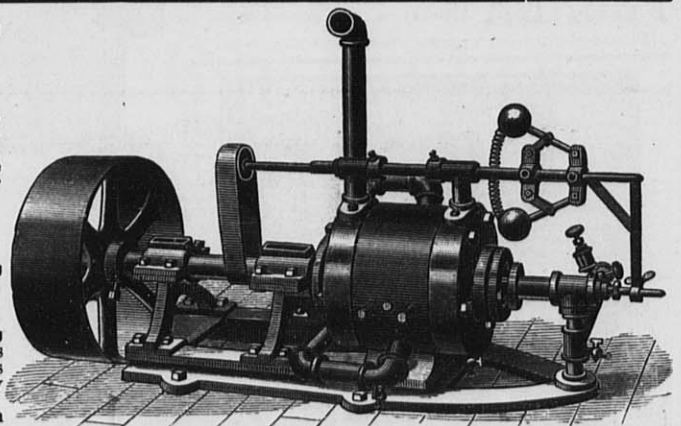
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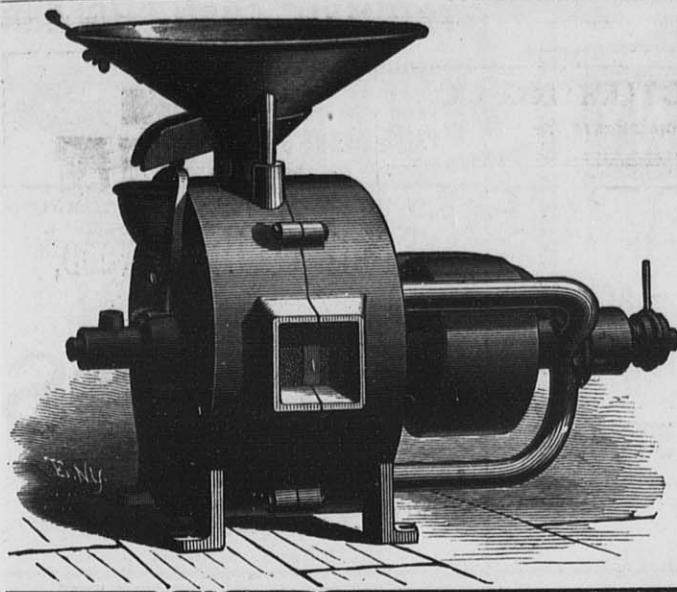
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